WATER POLLUTION CONTROL PROJECTS

OPERATING SUMMARY

1980

Ontario

Ministry of the Environment

Hon. Keith C. Norton, Q. C.,
Minister

G. J. M. Raymond,
Deputy Minister

WATER POLLUTION CONTROL PROJECTS

OPERATED BY:

Ontario

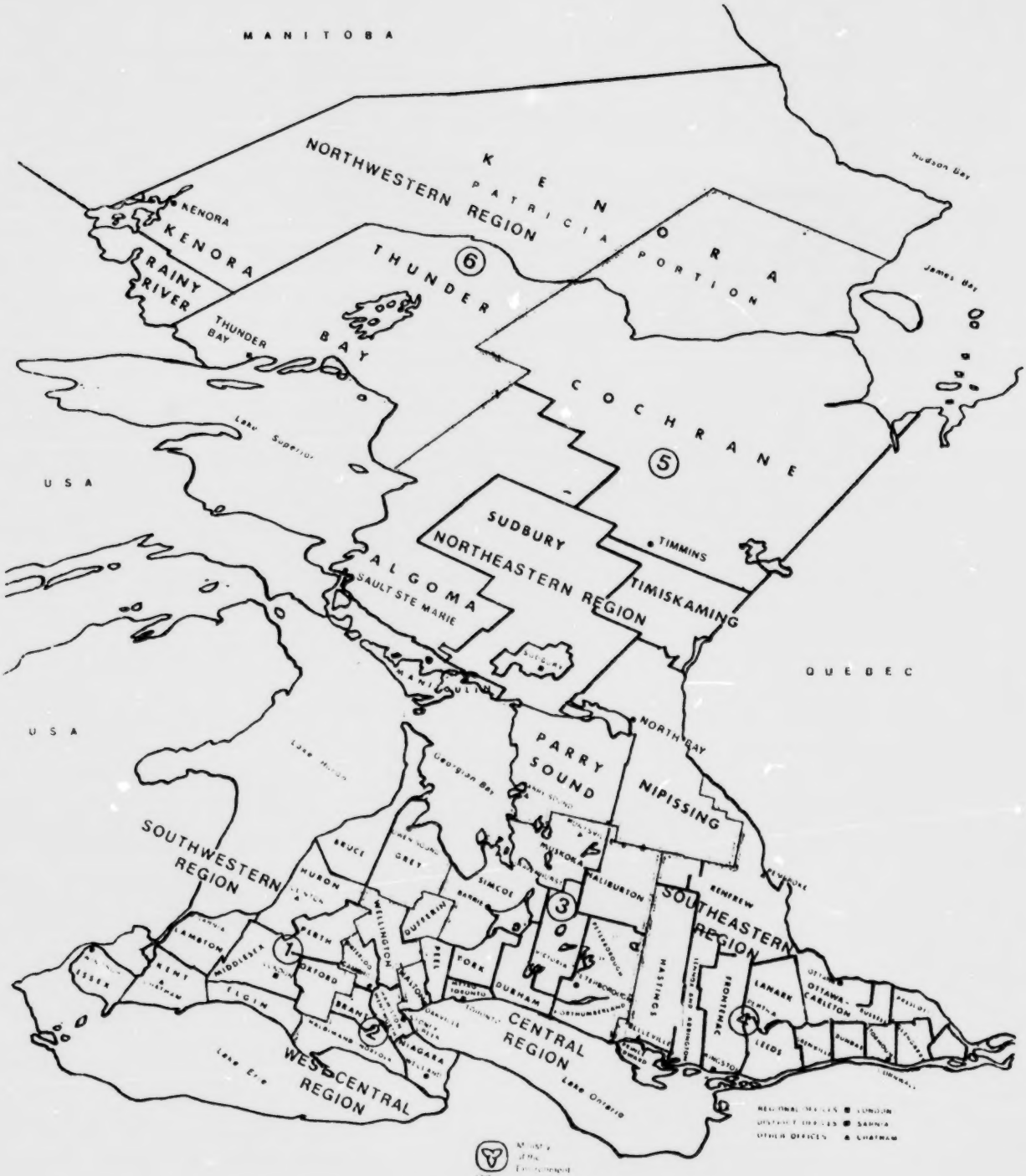
Ministry
of the
Environment

PREPARED BY:

THE MUNICIPAL AND PRIVATE SECTION

POLLUTION CONTROL BRANCH

(416) 965-1655



REGIONS AND OFFICES
IN ONTARIO

FOREWORD

The Ministry of the Environment is concerned with the protection and enhancement of the natural environment; and to meet this objective, one of its goals is to ensure the sound management of wastes across the province. In this regard, the Ministry inspects and regulates all wastewater treatment facilities, and monitors the performance of the treatment plants and their effluent qualities with routine and special sampling programs. The administration of these services and programs is carried out on a regional basis.

Normally, the responsibility for the provision of wastewater treatment services lies with the individual municipalities. However, by special arrangement, more than 200 wastewater facilities in the Province of Ontario are administered and operated by the six Regional Utility Operations Sections of the Ministry of the Environment. In order to maintain operational control and long-term evaluation of these provincially-operated facilities, up-to-date statistics are maintained on process performance and operating costs for each plant, and an annual "Operating Summary" of these statistics is traditionally produced.

In the future, the scope of this statistical data base will be slightly modified and the data collection will be extended to cover the municipally-operated treatment plants. Hence, all major wastewater treatment facilities in the Province of Ontario will be included in the "Operating Summaries".

The majority of the summary tables and all of the individual performance reports are computer produced.

PROJECTS INCLUDED IN THIS REPORT

PROJECT	CAPACITY 1000m³	WATERCOURSE	PAGE
PRIMARY			
REGION 1 - SOUTHWEST			
1. Owen Sound	13.638	Georgian Bay	62
2. Point Edward	2.591	St. Clair R.	64
REGION 2 - WEST CENTRAL			
3. Nanticoke (Port Dover)	4.091	L. Erie	68
REGION 3 - CENTRAL			
4. Midland	5.682	Midland Bay	72
REGION 4 - SOUTHEAST			
5. Cornwall	37.504	St. Lawrence R	76
6. Petawawa	7.273	Ottawa R.	78
7. Prescott	4.546	St. Lawrence R	80
REGION 5 - NORTHEAST			
8. Espanola	3.000	Spanish R.	84
9. Parry Sound	3.773	McCurry L.	86
10. Sault Ste. Marie	54.552	St. Mary's R	88
REGION 6 - NORTHWEST			
11. Fort Frances	9.092	Rainy R.	92
CONVENTIONAL ACTIVATED SLUDGE			
REGION 1 - SOUTHWEST			
12. Ingersoll (Plant A)	3.409	Thames R.	98
13. Ingersoll (Plant B)	6.819	Thames R.	98
14. St. Mary's	3.636	Thames R.	100
15. Tillsonburg	8.182	Big Otter Cr.	102
16. Tuckersmith (Van Astra)	1.404	Bayfield	104
17. Wallaceburg	6.819	Sydenham R.	106
REGION 2 - WEST CENTRAL			
18. Brantford	56.825	Grand R.	110
19. Cambridge (Galt)	38.641	Grand R.	112
20. Cambridge (Preston)	16.865	Grant R.	114
21. Delhi	3.182	Big Cr.	116
22. Dunnville	7.728	Grand R.	118
23. Fergus	5.000	Grand R.	120
24. Haldimand (Caledonia)	2.273	Grand R.	122
25. Haldimand (Hagersville)	.909	Sandusk Cr.	124
26. Kitchener	122.742	Grand R.	126
27. Palmerston	0.681	Wallace Drain	128
28. Waterloo	45.460	Grand R.	130
29. Woolwich (Elmira)	3.091	Canagagigue Cr.	132
REGION 3 - CENTRAL			
30. Campbellford	5.909	Trent R.	138
31. Mississauga (Lakeview)	227.300	L. Ontario	140
REGION 4 - SOUTHEAST			
32. Belleville	36.368	Bay of Quinte	144
33. Kingston Twp.	11.137	L. Ontario	146
34. Sidney (Batawa)	.568	Trent R.	148
35. Trenton	15.911	Bay of Quinte	150
REGION 5 - NORTHEAST			
36. North Bay	36.368	L. Nipissing	154
37. Sturgeon Falls	4.546	Sturgeon R.	156
38. Valley East (H., V.C., & V.T.)	11.365	Vermilion R.	158
EXTENDED AERATION/CONTACT STABILIZATION			
REGION 1 - SOUTHWEST			
39. Dresden	4.546	Sydenham	164
40. Maidstone (Belle R)	6.819	Lake St. Clair	166
41. Mildmay	.968	Otter Cr.	168
42. Moore (Corunna)	4.364	St. Clair R.	170
43. Moore (Courtright)	.545	St. Clair R.	172
44. Westminster	1.136	Dingham	174

PROJECT	CAPACITY 1000m³	WATERCOURSE	PAGE
EXTENDED AERATION/CONTACT STABILIZATION Cont'd			
REGION 2 - WEST CENTRAL			
45. Elora	0.377	Grand R.	178
46. North Dumfries (P.V. Ayr)	1.181	Nith River	180
47. Paris	2.273	Grand R.	182
48. Wellesley	0.500	Nith R.	184
49. Wilmot (Baden)	0.922	Baden Cr.	186
REGION 3 - CENTRAL			
50. Alliston	3.500	Boyne R.	190
51. Coldwater	0.545	Coldwater R.	192
52. Millbrook	1.136	Baxter Cr.	194
53. Mississauga (Clarkson)	54.552	L. Ontario	196
54. Port McNicoll	1.045	Georgian Bay	198
55. Smith (Woodland Acres)	0.45	Otonabee R.	200
REGION 4 - SOUTHEAST			
56. Bancroft	1.818	York R.	204
57. Barry's Bay	1.241	Kamaniskeg L.	206
58. Chalk River	0.363	Duck L.	208
59. Cobden	0.682	Muskrat R.	210
60. Deseronto	1.363	Bay of Quinte	212
61. Eganville	0.763	Bonnechere R	214
62. Ernestown (Odessa)	0.909	Millhave Cr.	216
63. Frankford	1.363	Trent R.	218
64. Hagarty & Richards (Killaloe)	0.591	Brundenell Cr. (Golden L.)	220
65. L'Orignal	0.863	Ottawa R.	222
66. Marmora	0.868	Crowe R.	224
67. Merrickville	0.500	Rideau R.	226
68. Pittsburgh (Cana)	0.095	Cataraqui R.	228
REGION 5 - NORTHEAST			
69. Black R. - Matheson (M)	.681	Black R.	232
70. Blind River	3.500	L. Huron	234
71. Haileybury	1.591	L. Timiskaming	236
72. Iroquois Falls	4.091	Abitibi R.	238
73. Kirkland Lake	13.638	Murdock Dr.	240
74. Latchford	0.340	Montreal R.	242
75. Moosonee (North)	0.250	Butler Cr.	244
76. Moosonee (Old Townsite)	0.509	Store Cr.	246
77. Rayside Balfour (Azilda)	1.818		248
78. Rayside Balfour (Chelmsford)	3.069	Whitson Cr.	250
79. Smooth Rock Falls	1.636	Mattagami	252
80. Wicksteed (Hornepayne)	1.364	Jackfish R.	254
REGION 6 - NORTHWEST			
81. Ear Falls	2.863	English R.	258
82. Geraldton	1.818	L. Kenogamisis	260
83. Ignace	2.500	Agimac Cr.	262
84. Long Lac	2.454	Suicide R.	264
85. Pickle Lake	0.909	Kawinogan's R.	268
86. Red Lake	1.136	Howey Bay	270
87. Schreiber	1.136	L. Superior	272
MODIFIED SECONDARY			
REGION 4 - SOUTHWEST			
88. Hawkesbury	12.274	Ottawa R.	278
HIGH RATE ACTIVATED SLUDGE			
REGION 1 - SOUTHWEST			
89. Meaford	3.909	Georgian Bay	284
REGION 2 - WEST CENTRAL			
90. Cambridge (Hespeler)	9.319	Speed R.	288
REGION 3 - CENTRAL			
91. Bradford	3.636	Schomberg R.	292
REGION 4 - SOUTHEAST			
92. Carleton Place	5.455	Mississippi R.	296

PROJECT	CAPACITY 1000m³	WATERCOURSE	PAGE
OXIDATION DITCH			
REGION 1 - SOUTHWEST			
93. Paisley	0.704	Saugeen R.	302
94. Southampton	3.045	Saugeen R.	304
REGION 2 - WEST CENTRAL			
95. Grand Valley	0.600	Grand R.	308
96. Haldimand (Cayuga)	0.909	Grand R.	310
97. Woolwich (St. Jacobs)	0.954	Conestoga	312
REGION 3 - CENTRAL			
98. Fenelon Falls	1.000	Fenelon R.	316
99. Hastings	1.059	Trent R.	318
100. Norwood	0.727	Ouse R.	320
TERTIARY TREATMENT			
REGION 1 - SOUTHWEST			
101. Petrolia	3.182	Bear Creek	326
102. Stratford	27.276	Avon R.	328
REGION 2 - WEST CENTRAL			
103. Orangeville	6.819	Credit R.	332
104. Simcoe	14.692	Lynn R.	334

PROJECT	WATERCOURSE	PAGE
WASTE STABILIZATION PONDS		
CONVENTIONAL LAGOON CONTINUOUS		
REGION 1 - SOUTHWEST		
105. Chesley	North Saugeen R.	340
106. Wiarton	Colpoy Bay	341
107. Wingham	Maitland R.	342
REGION 2 - WEST CENTRAL		
108. Shelburne	Boyne R.	346
REGION 5 - NORTHEAST		
109. Black R. Matheson (Ramore)	Black R.	350
110. Englehart	Englehart R.	351
111. Little Current	Ditch to Georgian Bay Magpie R.	352
112. New Liskeard	Wabi R.	353
113. Powassan	Genesee Cr.	355
CONVENTIONAL LAGOON SEASONAL		
REGION 1 - SOUTHWEST		
114. Aylmer	Catfish	360
115. Belmont	Kettle Creek	361
116. Dundalk	Foley Dr. to Grand R.	362
117. Dutton	Bennett Cr. to L. Erie	363
118. East Zorra (Tavistock)	Tributary to Thames R.	364
119. Enniskillen (Oil City)	Black Creek	365

PROJECT		WATERCOURSE	PAGE
CONVENTIONAL LAGOON SEASONAL (Cont'd)			
REGION 1 - SOUTHWEST			
120.	Forest	Hickory Cr.	366
121.	Glencoe	Newbiggen Cr.	367
122.	Gosfield N. (Cottam)	Maddox Dr. to Belle R.	368
123.	Harrow	Cedar Cr.	369
124.	Hansall	Black Cr. to Ausable R.	370
125.	Lucan	Little Ausable R.	371
126.	Markdale	Rocky Saugeen R.	372
127.	Milverton	Boyle Dr.	373
128.	Mitchell	Thames R.	374
129.	Moore (Brigden)	Bear Cr.	375
130.	Normanby (Neustadt)	South Saugeen R.	376
131.	Norwich	Big Otter Cr.	377
132.	Oil Springs	Black Cr.	378
133.	Port Stanley	Ditch to Kelle Cr.	379
134.	Raleigh & Tilbury E (Merlin)	Foxton Dr. to Jeanettes Cr.	380
135.	Ridgetown	Gawne Dr. to McGregor Cr.	381
136.	Rodney	Sixteen Mill Cr.	382
137.	Sarnia (Brights Grove)	Creek to L. Huron	383
138.	Seaforth	Cresswell Cr.	384
139.	Sombra (Port Lambton)	Marshy Cr. to St. Clair R.	385
140.	Sombra (Port Sombra)	S. Clair R.	386
141.	Tilbury North (Stoney Point)	Little Cr.	387
142.	Tilbury West (Comber)	Gov't Dr. No. 1 to Big Cr.	388
143.	Watford	Bear Cr.	389
144.	West Lorne	Zoller Cr.	390
145.	Zurich	Mun. Drain to L. Huron	391

PROJECT		WATERCOURSE	PAGE
CONVENTIONAL LAGOONS/SEASONAL			
REGION 2 - WEST CENTRAL			
146.	Arthur	Conestoga R.	394
147.	Harriston	Maitland	395
148.	Nanticoke (Jarvis)	Sandusk Cr.	396
149.	Norfolk (Port Rowan)	Mud Creek	397
150.	Wilmot (New Hamburg)	Nith R.	398
REGION 3 - CENTRAL			
151.	Beeton	Beeton Cr.	402
152.	Havelock	Plato Cr.	403
153.	Lakefield	Otonabee R.	404
REGION 4 - SOUTHEAST			
154.	Casselman	S. Nation R.	408
155.	Chesterville	S. Nation R.	409
156.	Ernestown (Amherstview)	Collins Cr. N. Channel	410
157.	Goubourn (Richmond)	Jock River	411
158.	Lancaster	Finney Cr.	412
159.	Madoc	Moira River	413
160.	Plantagenet	S. Nation R.	414
161.	Rockland	Ottawa R.	415
162.	Russell	Castor R.	416
163.	St. Isidore de Prescott	Scoth R.	417
164.	Stirling	Rawdon Cr.	418
165.	Tweed	Moira R.	419
166.	Vankleek Hill	Little Rideau Cr.	420
167.	Westport	Upper Rideau Lake	421

PROJECT	WATERCOURSE	PAGE
CONVENTIONAL LAGOONS/SEASONAL Cont'd		
REGION 5 - NORTHEAST		
169. Assiginack (Manitowaning)	L. Huron	426
170. Black R. Matheson(V.G.)	Black River	427
171. Bruce Mines	L. Huron to (St. Joseph Channel)	428
172. Burks Falls	Magnetawan R.	429
173. Caldwell (Verner)	Veuve R.	430
174. Casimir, J., A. (St. Charles)	McPherson Cr (W. Branch)	431
175. Fauquier (Moonbeam)	Creek to Groundhog R.	432
176. Gore Bay	Gore Bay	433
177. Haileybury (N. Cobalt)	Farr Creek	434
178. Hearst	Mattawishkwia R.	435
179. Michipicoten (Wawa)	Magpie River	436
180. North Himsworth (Callander)	Ditch to Callander Bay	437
181. Owens W., I.(Val Rita)	Creek to Kapuskasing R.	438
182. Ratter & Dunnet (Warren)	Veuve River	439
183. Shackleton & Machin (Fauq)	Ditch to Groundhog R.	440
184. Temagami	Snake Island Lake	441
185. Webbwood	Gough Cr.	442
REGION 6 - NORTHWEST		
186. Atwood (Rainy R.)	Rainy River	446
187. Emo	Rainy River	447

PROJECT	WATERCOURSE	PAGE
CONVENTIONAL LAGOON ANNUAL		
REGION 1 - SOUTHWEST		
188. Dover (Mitchell's Bay)	Lake St. Clair	452
189. Essex N. E.	Puce River Dr.	453
190. Essex S. W.	Canard R.	454
REGION 2 - WEST CENTRAL		
191. Dunnville (Oswego Park)	Oswego Cr.	458
REGION 4 - SOUTHEAST		
192. Alfred	Ruisseau Des Azatika	462
REGION 5 - NORTHEAST		
193. Cosby, M., M. (Noelville	Wolf River	466
194. Sundridge	Bernard Cr.	467
195. Thessalon	Thessalon Cr.	468
LAGOON AND SPRAY		
REGION 3 - CENTRAL		
196. Omemee	Pigeon R.	472
REGION 4 - SOUTHEAST		
197. Leeds & Lansdowne	La Rue Mills Cr.	476
AERATED CELL PLUS LAGOON		
REGION 1 - SOUTHWEST		
198. Durham	Saugeen R.	480
199. Kincardine	Lake Huron	481
200. Listowel	Chapman Dr.	482
201. Thornbury	Beaver R.	483
REGION 2 - WEST CENTRAL		
202. Nanticoke (Waterford)	Nanticoke Cr.	486
REGION 4 - SOUTHEAST		
203. Alexandria	Delisli R.	490
204. Almonte	Mississippi	491
EXFILTRATION LAGOON		
REGION 5 - NORTHEAST		
205. Mattawa	Mattawa R.	500

INTRODUCTION

This Operating Summary has been compiled from data collected during 1980 from 104 mechanical treatment plants and 101 waste stabilization ponds.

(Six of the mechanical treatment plants and one waste stabilization pond switched their operations from Ministry to municipal authority during 1980. They are not included in the following total volume and cost figures.)

During the year a total of 322.4 million cubic metres of wastewater was treated in these facilities, 291.3 million cubic metres in mechanical treatment plants and 31.1 million cubic metres in waste stabilization ponds.

The cost of operating the 98 mechanical treatment plants was 20.2 million dollars and for the 100 waste stabilization ponds, 1.65 million dollars.

PLANT LOADING

Hydraulic and organic loading data are summarized in the following table. For the hydraulic assessment, the average day flow for the year is compared to the design capacity and a percentage is calculated.

For the organic assessment, the design loadings for BOD and SS are compared to the actual loadings and a percentage is calculated.

Averages marked with a dot (•) are based upon less than twelve months data.

Projects marked with an asterisk (*) are those which have started-up, have switched operating mode, or have changed operating authority during 1980.

The wastewater treatment plants are grouped together by Ministry Region under each category of treatment type such as Primary or Conventional Secondary headings.

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 023

PLANT LOADING

PROJECT	HYDRAULIC LOADING: DESIGN CAPACITY 1000M3	HYDRAULIC LOADING: AVG. FLOW 1000M3	HYDRAULIC LOADING: MAX. FLOW 1000M3	HYDRAULIC LOADING: AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING: DESIGN LOADING KG/DAY BOD	ORGANIC LOADING: DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING: ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING: ACTUAL LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING: ACTUAL LOADING % OF DESIGN BOD	ORGANIC LOADING: ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/80-DEC/80										
PRIMARY										
SOUTHWESTERN										
OWEN SOUND	13.638	18.145	61.800	133	2454.8	2727.6	1313.2	2982.5	53	109
POINT EDWARD	2.591	1.854	2.650	71	440.4	518.2	335.0●	1466.5●	76	283
WEST-CENTRAL										
NANTICOKE (PORT DOVER)	4.091	2.634	5.850	64	859.1	1210.9	633.4●	915.3	73	75
CENTRAL										
*MIDLAND	13.638	9.212	23.044	67	3068.5	4091.4	798.3●	1827.0●	26	44
SOUTHEASTERN										
CORNWALL	37.504	46.381	95.700	123	4875.5	6000.6	5489.5	6041.9	112	100
PETAWAWA	7.273	3.101	7.760	42	–	–	530.9	488.0	–	–
PRESCOTT	4.546	4.232	13.130	93	363.6	727.3	265.7	988.5	73	135
NORTHEASTERN										
ESPANOLA	3.000	2.350	4.078	78	–	–	256.0●	518.4●	–	–
PARRY SOUND	2.273	4.900	9.410	215	568.2	454.6	284.6	520.0	50	114
SAULT STE MARIE	54.552	42.157	151.200	77	20457.0	16365.6	5613.2	6616.5	27	40
NORTHWESTERN										
FORT FRANCES	9.092	8.376	13.100	92	1181.9	1636.5	313.8●	803.6●	26	49

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 023

PLANT LOADING

PROJECT	HYDRAULIC LOADING: DESIGN CAPACITY 1000M3	HYDRAULIC LOADING: AVG. FLOW 1000M3	HYDRAULIC LOADING: MAX. FLOW 1000M3	HYDRAULIC LOADING: AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING: DESIGN LOADING KG/DAY BOD	ORGANIC LOADING: DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING: ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING: ACTUAL LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING: ACTUAL LOADING % OF DESIGN BOD	ORGANIC LOADING: ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/80-DEC/80										
CONVENTIONAL SECONDARY										
SOUTHWESTERN										
INGERSOLL (PLANT A)	3.409	1.327	3.450	38	-	-	231.6	335.3	-	-
INGERSOLL (PLANT B)	6.819	3.303	6.410	48	-	-	576.6	834.7	-	-
ST MARY'S	3.636	2.858	7.400	78	709.0	727.2	1211.0	1850.3	170	254
TILLSONBURG	8.182	4.612	7.196	56	1922.7	2045.5	377.4	829.0	19	40
TUCKERSMITH (VAN ASTRA)	1.404	.473	1.927	33	-	-	22.6	23.1	-	-
WALLACEBURG	6.819	6.054	14.701	88	1363.8	1704.7	850.7	1346.1	62	78
WEST-CENTRAL										
BRANTFORD	56.825	44.175	58.600	77	9660.2	9944.3	8120.8	10347.9	84	104
CAMBRIDGE (GALT)	38.641	30.020	47.160	77	9660.2	9660.2	3345.9	4638.0	34	48
CAMBRIDGE (PRESTON)	16.865	7.786	13.740	46	7926.5	7926.5	3153.3	2496.0	39	31
DELHI	3.182	2.220	3.740	69	540.9	604.6	266.4	357.0	49	59
DUNNVILLE	7.728	4.031	8.000	52	1406.4	1545.6	645.3	595.4	45	38
FERGUS	5.000	2.622	6.900	52	1000.0	1000.0	378.5	588.9	37	58
HALDIMAND (CALEDONIA)	2.273	1.868	4.900	82	-	-	173.2	339.8	-	-
HALDIMAND (HAGERSVILLE)	.909	1.285	2.380	141	-	-	70.7	159.8	-	-
KITCHENER	122.742	59.720	109.420	48	33754.0	36822.6	16634.4	14184.4	49	38
WATERLOO	45.460	33.190	61.800	73	12274.2	12274.2	6250.7	6485.8	50	52
WOOLWICH (ELMIRA IND.)	3.091	.473	1.475	15	525.4	927.3	153.8	118.2	29	12
WOOLWICH (ELMIRA TOWN)	3.091	3.605	9.618	116	3400.1	989.1	541.9	655.5	15	66
WOOLWICH (TOWN & IND)	3.091	4.080	11.093	131	1236.4	927.3	832.9	1285.5	67	138
PALMERSTON	.681	-	-	-	119.8	108.9	-	-	-	-
CENTRAL										
CAMPBELLFORD	5.909	6.561	11.100	111	1181.8	1181.8	427.0	808.0	36	68
MISSISSAUGA SOUTH-PEEL LAKEVIEW	227.300	169.755	315.038	74	68190.0	79555.0	38689.8	55113.6	56	69
SOUTHEASTERN										
BELLEVILLE	36.368	30.550	68.190	84	4727.8	6364.4	5728.1	10651.7	121	167
KINGSTON TWP	11.137	13.911	90.000	124	2650.6	2227.4	1949.8	2993.8	73	134
SIDNEY TWP (BATAWA)	.568	.989	4.242	174	124.9	142.0	41.8●	43.0●	33	30
TRENTON	15.911	11.868	30.430	74	3182.2	4773.3	1723.8	2163.1	54	45
NORTHEASTERN										
NORTH BAY	36.368	32.159	63.830	88	5455.2	7273.6	5177.5	11183.2	94	153
STURGEON FALLS	4.546	6.265	14.372	137	818.2	909.2	327.8	521.5	40	57
*VALLEY EAST	11.365	5.675	12.200	49	-	-	604.3●	852.9●	-	-

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PLANT LOADING

PROJECT	HYDRAULIC LOADING: DESIGN CAPACITY 1000M3	HYDRAULIC LOADING: AVG. FLOW 1000M3	HYDRAULIC LOADING: MAX. FLOW 1000M3	HYDRAULIC LOADING: AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING: DESIGN LOADING KG/DAY BOD	ORGANIC LOADING: DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING: ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING: ACTUAL LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING: ACTUAL LOADING % OF DESIGN BOD	ORGANIC LOADING: ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/80-DEC/80										
EXT AERATION/CONT STABLIZATION										
SOUTHWESTERN										
DRESDEN	4.546	1.192	3.969	26	1200.1	991.0	127.6	447.4	10	45
MAIDSTONE (BELLE RIVER)	6.819	3.134	5.460	45	2045.7	2045.7	194.2	222.1	9	10
MILDMAY	.968	.244	.943	25	–	–	32.3	33.2	–	–
MOORE (CORUNNA)	4.364	1.847	3.245	42	654.6	654.6	190.6●	255.9●	29	39
MOORE (COURTRIGHT)	.545	.369	.933	67	–	–	43.6●	63.5●	–	–
WESTMINSTER TWP	1.136	1.691	3.637	148	227.2	227.2	223.4	307.6	98	135
WEST-CENTRAL										
*ELORA	3.068	.833	1.500	27	644.2	767.0	111.4●	186.0●	17	24
*NORTH DUMFRIES (P.V.AYR)	1.181	.209	.430	17	–	–	21.0●	26.2●	–	–
PARIS	2.273	1.931	3.900	84	454.6	386.4	414.1	368.2	91	95
WELLESLEY	.500	.366	1.600	73	100.0	125.0	37.1●	56.9	37	45
WILMOT (BADEN)	.922	.518	1.200	56	221.2	276.6	142.0	94.4	64	34
CENTRAL										
ALLISTON	3.500	2.479	4.199	70	542.5	700.0	714.3	694.3	131	99
COLDWATER	.545	.407	2.064	74	92.6	109.0	27.8	31.4	30	28
MILLBROOK	1.136	.728	2.004	64	227.2	284.0	69.1	79.1	30	27
MISSISSAUGA SOUTH-PEEL CLARKSON	54.552	56.268	134.100	103	10092.1	10910.4	12978.6	20153.2	128	184
PORT MCNICOLL	1.045	1.143	2.255	109	177.6	209.0	61.5	106.2	34	50
SMITH TOWNSHIP	.454	.259	8.092	57	–	–	12.3●	14.2●	–	–
SOUTHEASTERN										
BANCROFT	1.818	.985	1.780	54	363.6	363.6	36.3	55.5	10	15
BARRY'S BAY	1.241	.444	.727	35	273.0	248.2	166.3	139.3	60	56
CHALK RIVER	.363	.393	.690	108			43.6	46.5	–	–
*COBDEN	.909	.402	.875	44	–	–	33.9●	36.0●	–	–
DESERONTO	1.363	.971	2.160	71	268.5	305.3	97.8	120.4	36	39
EGANVILLE	.763	.377	.609	49	138.8	117.5	54.6	54.5	39	46
ERNESTOWN (ODESSA)	.909	.841	2.278	92	–	–	41.6	46.7	–	–
FRANKFORD	1.363	.852	3.060	62	231.7	272.6	55.7●	66.0	24	24
HAGARTY & RICHARDS(KILLALOE)	.518	.092	.205	17	–	–	26.7	36.3	–	–
L'ORIGNAL	.863	1.002	3.234	116	172.6	215.7	62.8	82.0●	36	38
MARMORA	.868	.467		53	173.6	173.6	41.3●	48.9●	23	28
MERRICKVILLE	.500	.394	1.605	78	125.0	125.0	37.5	46.1	30	36
PITTSBURG (CANA)	.095	.080	.424	84	18.0	20.9	6.1	8.1	33	39
NORTHEASTERN										
BLACK RIVER - MATHESON	.681	.893	2.180	131	–	–	26.0	45.3●	–	–

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PLANT LOADING

PROJECT	<--- HYDRAULIC LOADING DESIGN CAPACITY 1000M3	AVG. FLOW 1000M3	MAX. FLOW 1000M3	AVG. FLOW % OF DESIGN CAPACITY --->		<--- ORGANIC LOADING DESIGN LOADING KG/DAY BOD	SUSP.SOLIDS	ACTUAL LOADING KG/DAY BOD	SUSP.SOLIDS	ACTUAL LOADING % OF DESIGN BOD --->	SUSP.SOLIDS
JAN/80-DEC/80											
BLIND RIVER	3.500	1.383	2.332	39		–	–	81.7	95.1	–	–
HAILEYBURY	1.591	1.928	3.800	121		270.4	318.2	163.1●	224.8●	60	70
IROQUOIS FALLS	4.091	2.922	8.720	71		634.1	654.5	129.7●	500.3	20	76
KIRKLAND LAKE	13.638	11.055	29.700	81		–	–	602.6●	935.1●	–	–
LATCHFORD	.340	.223	.414	65		68.0	79.2	13.9●	21.7●	20	27
MOOSONEE (NORTH)	.250	.124	.217	49		–	–	14.8●	11.1●	–	–
MOOSONEE DEV'L AREA BD	.509	.598	1.159	117		129.2	145.5	64.1●	81.4●	49	55
*RAYSIDE-BALFOUR (AZILDA)	1.818	2.353	6.273	129		–	–	154.3●	258.8●	–	–
SMOOTH ROCK FALLS	1.636	1.669	5.046	102		245.4	245.4	96.2	167.1	39	68
WICKSTEED (HORNEPAYNE)	1.363	.648	–	47		–	–	–	31.5●	–	–
*RAYSIDE-BALFOUR(CHLMSF'D NORTHWESTERN	2.841	4.383	9.320	154	100			482.1●	1037.8●		
EAR FALLS	2.863	.594	1.435	20		801.6	887.5	33.7	99.6	4	11
GERALDTON	1.818	1.267	1.864	69		418.1	363.6	51.8●	125.9●	12	34
IGNACE	2.500	.826	2.150	33		500.0	500.0	65.8●	317.5●	13	63
LONGLAC	2.454	1.098	3.240	44		490.8	490.8	103.6●	288.9●	21	58
LONGLAC SECTION A	1.227	.548	–	45		–	–	48.8●	88.1●	–	–
LONGLAC SECTION B	1.227	.548	–	45		–	–	57.3●	234.2●	–	–
PICKLE LAKE	.909	.635	1.240	69		–	–	15.2●	31.4●	–	–
RED LAKE	1.136	1.833	–	161		231.7	227.2	105.6●	180.3●	45	79
SCHREIBER	1.136	1.216	2.305	107		511.2	272.6	102.4	310.7	20	113
MODIFIED SECONDARY											
SOUTHEASTERN											
HAWKESBURY	12.274	7.485	22.210	60	100	–	–	325.2●	509.6●	–	–

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PLANT LOADING

PROJECT	HYDRAULIC LOADING DESIGN CAPACITY 1000M3	HYDRAULIC LOADING AVG. FLOW 1000M3	HYDRAULIC LOADING MAX. FLOW 1000M3	HYDRAULIC LOADING AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING DESIGN LOADING KG/DAY BOD	ORGANIC LOADING DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING ACTUAL LOADING KG/DAY SUSP.SOLIDS	ACTUAL LOADING % OF DESIGN BOD	ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/80-DEC/80										
HIGH RATE										
SOUTHWESTERN										
MEAFORD	3.909	2.805	6.165	71	1563.6	781.8	142.4	249.1	9	31
WEST-CENTRAL										
CAMBRIDGE (HESPELER)	9.319	5.393	9.547	57	2422.9	2003.5	771.1	870.0	31	43
CENTRAL										
BRADFORD	3.636	2.893	7.191	79	836.2	999.9	569.4	1281.8	68	128
SOUTHEASTERN										
CARLETON PLACE	5.455	7.102	11.400	130	589.1	687.3	274.9	427.0	46	62

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PLANT LOADING

PROJECT	HYDRAULIC LOADING DESIGN CAPACITY 1000M3	HYDRAULIC LOADING AVG. FLOW 1000M3	HYDRAULIC LOADING MAX. FLOW 1000M3	HYDRAULIC LOADING AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING DESIGN LOADING KG/DAY BOD	ORGANIC LOADING DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING ACTUAL LOADING KG/DAY SUSP.SOLIDS	ACTUAL LOADING % OF DESIGN BOD	ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/80-DEC/80										
OXIDATION DITCH										
SOUTHWESTERN										
PAISLEY	.704	.323	.970	45	119.6	140.8	29.4	34.0	24	24
SOUTHAMPTON	3.045	1.335	2.930	43	517.6	609.0	209.9	123.0	40	20
WEST-CENTRAL										
GRAND VALLEY	.600	.251	1.370	41	–	–	37.9	52.6	–	–
HALDIMAND (CAYUGA)	.909	.472	2.220	51	–	–	49.0	70.7	–	–
WOOLWICH (ST.JACOBS)	.954	1.109	4.342	116	190.8	190.8	458.2	223.2	240	117
CENTRAL										
FENELON FALLS	1.000	.995	1.670	99	170.0	200.0	69.1●	101.8	40	50
HASTINGS	1.059	.518	1.600	48	–	–	414.5●	1842.9●	–	–
NORWOOD	.727	.417	1.914	57	145.4	181.7	31.1	42.0	21	23

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PLANT LOADING

PROJECT	HYDRAULIC LOADING DESIGN CAPACITY 1000M3	HYDRAULIC LOADING AVG. FLOW 1000M3	HYDRAULIC LOADING MAX. FLOW 1000M3	HYDRAULIC LOADING AVG. FLOW % OF DESIGN CAPACITY	ORGANIC LOADING DESIGN LOADING KG/DAY BOD	ORGANIC LOADING DESIGN LOADING KG/DAY SUSP.SOLIDS	ORGANIC LOADING ACTUAL LOADING KG/DAY BOD	ORGANIC LOADING ACTUAL LOADING KG/DAY SUSP.SOLIDS	ACTUAL LOADING % OF DESIGN BOD	ACTUAL LOADING % OF DESIGN SUSP.SOLIDS
JAN/80-DEC/80 (TERTIARY TREATMENT) EFFLUENT FILTRATION										
SOUTHWESTERN										
*PETROLIA	3.182	1.848	9.428	58	-	-	126.6●	135.9●	-	-
STRATFORD	27.276	20.515	60.000	75	3818.6	6819.0	2068.5	3852.2	54	56
WEST-CENTRAL										
ORANGEVILLE	6.819	6.717	21.400	98	1363.8	1704.7	585.1	951.0	42	55
SIMCOE	14.692	11.219	14.972	76	3232.2	3379.1	2075.6	2049.7	64	60

PLANT PERFORMANCE

The arithmetic mean of the monthly values for BOD and SS concentrations for plant influent and effluent are shown together with the number of samples taken. These results include samples sent to the Ministry of the Environment laboratories as well as those analysed at the plants.

Figures marked with a dot (•) are based upon less than twelve months of data.

Projects marked with an asterisk (*) are those which have started-up, have switched operating mode, or have changed operating authority during 1980.

The wastewater treatment plants are grouped together by Ministry Region under each category of treatment type such as Primary or Conventional Secondary headings.

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PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND: PLANT INFLUENT NO OF SAMPLES	BOD MG/L	PLANT EFFLUENT NO OF SAMPLES	BOD MG/L	REDUCTION %	SUSPENDED SOLIDS: PLANT INFLUENT NO OF SAMPLES	SS CONC MG/L	PLANT EFFLUENT NO OF SAMPLES	SS CONC MG/L	REDUCTION %
JAN/80-DEC/80										
PRIMARY										
SOUTHWESTERN										
OWEN SOUND	22	72	22	28.6	60	272	164	272	24.6	85
POINT EDWARD	11	180●	11	65.5●	63	11	791●	11	73.1●	90
WEST-CENTRAL										
NANTICOKE (PORT DOVER)	21	240●	20	39.4●	83	22	347	22	20.6	94
CENTRAL										
*MIDLAND	3	86●	3	40.0●	53	3	198●	3	36.6●	81
SOUTHEASTERN										
CORNWALL	27	118	26	77.5	34	58	130	57	58.5	55
PETAWAWA	23	171	24	44.7	73	30	157	31	45.2	71
PRESCOTT	23	62	23	16.8	73	23	233	23	26.6	88
NORTHEASTERN										
ESPANOLA	18	108●	19	47.4●	56	18	220●	19	45.0●	79
PARRY SOUND	24	58	23	27.9	51	65	106	64	47.3	55
SAULT STE MARIE	59	133	59	63.0	52	108	156	108	53.2	66
NORTHWESTERN										
FORT FRANCES	24	37	20	32.3●	13	34	95	30	53.2●	44

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PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND — PLANT INFLUENT NO OF SAMPLES	BOD INFLUENT AVG BOD MG/L	BOD EFFLUENT NO OF SAMPLES	BOD EFFLUENT AVG BOD MG/L	BOD REDUCTION %	BOD REDUCTION NO. OF MONTHS EFFLUENT AVERAGE >15 MG/L	SUSPENDED SOLIDS — PLANT INFLUENT NO OF SAMPLES	SS INFLUENT AVG SS CONC MG/L	SS EFFLUENT NO OF SAMPLES	SS EFFLUENT AVG SS CONC MG/L	SS REDUCTION %	SS REDUCTION NO. OF MONTHS EFFLUENT AVER. >15 MG/L
JAN/80-DEC/80												
CONVENTIONAL SECONDARY												
SOUTHWESTERN												
INGERSOLL (PLANT A)	25	174	25	7.9	95	2	25	252	25	11.3	95	3
INGERSOLL (PLANT B)	25	174	25	8.1	95	1	25	252	25	13.5	94	3
ST MARY'S	51	423	49	40.4	90	10	51	647	50	30.1	95	10
TILLSONBURG	12	81	12	3.3	95	0	63	179	62	6.2	96	0
TUCKERSMITH (VAN ASTRA)	23	47	23	9.1	80	3	23	48	23	8.3	82	1
WALLACEBURG	50	140	49	4.7	96	0	252	222	251	6.4	97	0
WEST-CENTRAL												
BRANTFORD	61	183	61	11.6	93	2	220	234	232	11.6	95	2
CAMBRIDGE (GALT)	79	111	81	8.1	92	1	247	154	290	11.3	92	2
CAMBRIDGE (PRESTON)	45	405	94	15.1	96	5	313	320	269	26.4	91	12
DELHI	22	120	22	9.1	92	2	105	160	105	8.0	94	0
DUNNVILLE	26	160	26	5.9	96	0	175	147	174	11.7	92	0
FERGUS	20	144	20	8.5	94	1	20	224	252	18.6	91	7
HALDIMAND (CALEDONIA)	22	92	22	8.6	90	1	22	181	53	17.7	90	6
HALDIMAND (HAGERSVILLE)	23	55	23	7.4	86	0	23	124	23	14.4	88	3
KITCHENER	99	278	110	13.2	95	4	250	237	248	10.2	95	3
WATERLOO	82	188	82	13.4	92	3	238	195	238	10.8	94	1
WOOLWICH (ELMIRA IND.)	49	325	-	-	-	-	238	250	-	-	-	-
WOOLWICH (ELMIRA TOWN)	49	150	-	-	-	-	239	181	-	-	-	-
WOOLWICH (TOWN & IND)	49	204	49	18.3	91	5	240	315	242	69.2	78	12
PALMERSTON	8	44●	9	19.1●	57	4	8	76●	9	27.0●	64	6
CENTRAL												
CAMPBELLFORD	12	65	12	5.1	92	0	47	123	45	7.1	94	0
MISSISSAUGA SOUTH-PEEL LAKEVIEW	79	227	201	17.4	92	6	80	324	211	18.6	94	6
SOUTHEASTERN												
BELLEVILLE	180	187	182	15.9	91	5	180	348	178	20.5	94	9
KINGSTON TWP	42	140	67	14.5	89	5	50	215	74	16.5	92	5
SIDNEY TWP (BATAWA)	15	42●	14	5.4●	87	0	46	43●	41	10.3●	76	2
TRENTON	38	145	38	12.4	91	3	252	182	252	7.6	95	0
NORTHEASTERN												
NORTH BAY	27	161	29	20.0	87	12	213	347	204	18.3	94	9
STURGEON FALLS	24	52	23	6.1	88	1	72	83	70	7.3	91	0
*VALLEY EAST	7	106●	7	6.5●	93	0	11	150●	10	5.4●	96	0

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PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND: PLANT INFLUENT NO OF SAMPLES	BOD MG/L	PLANT EFFLUENT NO OF SAMPLES	BOD MG/L	REDUCTION %	NO. OF MONTHS EFFLUENT AVERAGE >15 MG/L	SUSPENDED SOLIDS: PLANT INFLUENT NO OF SAMPLES	SS CONC MG/L	PLANT EFFLUENT NO OF SAMPLES	SS CONC MG/L	REDUCTION %	NO. OF MONTHS EFFLUENT AVERAGE >15 MG/L
JAN/80-DEC/80												
EXT AERATION/CONT STABLIZATION												
SOUTHWESTERN												
DRESDEN	53	107	51	5.3	94	0	75	375	61	20.7	94	10
MAIDSTONE (BELLE RIVER)	58	61	51	9.0	85	0	165	70	165	9.0	87	0
MILDMAY	25	132	25	3.2	97	0	25	136	25	7.1	94	1
MOORE (CORUNNA)	10	103●	11	3.7●	96	0	10	138●	11	15.6●	88	3
MOORE (COURTRIGHT)	11	118●	11	6.4●	94	0	11	172●	11	16.2●	90	4
WESTMINSTER TWP	15	132	15	5.3	95	0	15	181	15	8.9	95	1
WEST-CENTRAL												
*ELORA	10	133●	9	22.8●	82	4	10	223●	111	38.3●	82	7
*NORTH DUMFRIES (P.V.AYR)	28	100●	27	5.3●	94	0	30	125●	29	13.5●	89	3
PARIS	43	214	43	29.9	86	12	44	190	44	43.2	77	12
WELLESLEY	21	101	19	2.3●	97	0	85	155	84	14.5	90	5
WILMOT (BADEN)	38	274	27	5.5	97	1	38	182	27	7.7	95	2
CENTRAL												
ALLISTON	27	288	27	6.8	97	0	26	280	27	21.1	92	7
COLDWATER	12	68	12	5.5	91	0	12	77	12	8.3	89	0
MILLBROOK	23	94	23	4.0	95	0	23	108	23	11.0	89	3
MISSISSAUGA SOUTH-PEEL CLARKSON	154	230	197	4.7	97	0	154	358	197	9.5	97	1
PORT MCNICOLL	12	53	12	6.0	88	0	12	92	12	9.5	89	1
SMITH TOWNSHIP	21	47	20	3.2●	93	0	21	55	20	5.9●	89	0
SOUTHEASTERN												
BANCROFT	34	36	24	2.3	93	0	71	56	81	4.1	92	0
BARRY'S BAY	23	374	25	5.9	98	1	107	313	107	16.7	94	5
CHALK RIVER	21	111	22	27.6	75	9	41	118	42	26.6	77	7
*COBDEN	9	84●	9	1.8●	97	0	9	89●	9	11.1●	87	0
DESERONTO	35	100	35	7.3	92	1	35	124	35	11.1	91	1
EGANVILLE	24	144	24	2.9	97	0	24	144	23	7.4	94	1
ERNESTOWN (ODESSA)	28	49	27	2.0	95	0	28	55	27	14.9	73	4
FRANKFORD	14	65●	15	10.7●	83	3	51	77	51	20.9	72	4
HAGARTY & RICHARDS(KILLALOE)	24	291	23	6.6	97	3	89	395	89	14.3	96	4
L'ORIGNAL	24	62	24	12.1●	80	3	36	81	37	32.7●	60	3
MARMORA	21	88	21	4.1	95	1	20	104●	20	15.8●	84	6
MERRICKVILLE	34	95	34	9.5	89	3	34	117	34	22.0	81	5
PITTSBURG (CANA)	24	76	24	5.8	92	1	71	101	70	17.4	82	5
NORTHEASTERN												
BLACK RIVER - MATHESON	23	29	23	3.4	88	0	23	50	20	8.4●	83	

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PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND						SUSPENDED SOLIDS					
	PLANT INFLUENT		PLANT EFFLUENT		REDUCTION		PLANT INFLUENT		PLANT EFFLUENT		REDUCTION	
	NO OF SAMPLES	AVG BOD MG/L	NO OF SAMPLES	AVG BOD MG/L	%	NO. OF MONTHS EFFLUENT AVERAGE > 15 MG/L	NO OF SAMPLES	AVG SS CONC MG/L	NO OF SAMPLES	AVG SS CONC MG/L	%	NO. OF MONTHS EFFLUENT AVERAGE > 15 MG/L
JAN/80-DEC/80												
BLIND RIVER	14	59	13	3.2	94	0	57	68	55	5.2	92	0
HAILEYBURY	16	84●	14	17.7●	79	6	16	116●	14	12.1●	89	2
IROQUOIS FALLS	5	44●	5	14.2●	67	2	39	171	36	27.3	84	5
KIRKLAND LAKE	20	54●	21	14.6●	73	6	20	84●	21	26.3●	68	8
LATCHFORD	21	62●	21	3.2●	94	0	21	97●	20	15.3●	84	3
MOOSONEE (NORTH)	4	119●	4	7.6●	93	1	4	90●	4	12.2●	86	0
MOOSONEE DEV'L AREA BD	5	107●	5	18.7●	82	3	4	136●	5	22.0●	83	3
*RAYSIDE-BALFOUR (AZILDA)	7	65●	7	7.0●	89	0	16	110●	16	8.0●	92	0
SMOOTH ROCK FALLS	25	57	24	3.6	93	0	25	100	50	1.6	98	0
WICKSTEED (HORNEPAYNE)	-	-	-	-	-	-	5	48●	5	6.7●	86	0
*RAYSIDE-BALFOUR(CHLMSF'D NORTHWESTERN	10	110●	10	12.3●	88	2	36	236●	38	9.4●	96	1
EAR FALLS	39	56	37	19.9	64	4	39	167	38	61.7	63	7
GERALDTON	8	40●	8	2.2●	94	0	8	99●	8	22.8●	77	1
IGNACE	81	79●	25	2.9	96	0	24	384●	25	9.2	97	1
LONGLAC	19	94●	19	29.2●	68	7	19	263●	19	71.2●	72	11
LONGLAC SECTION A	11	89●	11	22.3●	74	6	11	160●	11	70.9●	55	10
LONGLAC SECTION B	8	104●	8	32.8●	68	5	8	427●	8	72.5●	83	8
PICKLE LAKE	35	23	30	2.3●	90	0	34	49	31	12.6●	74	4
RED LAKE	9	57●	9	15.3●	73	4	10	98●	10	23.1●	76	9
SCHREIBER	20	84	20	14.0	83	1	22	255	20	39.7	84	12
MODIFIED SECONDARY												
SOUTHEASTERN												
HAWKESBURY	24	43●	25	10.4●	76	2	75	68●	67	20.5●	69	5

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PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND						SUSPENDED SOLIDS					
	PLANT INFLUENT		PLANT EFFLUENT		REDUCTION		PLANT INFLUENT		PLANT EFFLUENT		REDUCTION	
	NO OF SAMPLES	AVG BOD MG/L	NO OF SAMPLES	AVG BOD MG/L	%	NO OF MONTHS EFFLUENT AVERAGE <15 MG/L	NO OF SAMPLES	AVG SS CONC MG/L	NO OF SAMPLES	AVG SS CONC MG/L	%	NO OF MONTHS EFFLUENT AVERAGE <15 MG/L
JAN/80-DEC/80												
HIGH RATE												
SOUTHWESTERN												
MEAFORD	25	50	25	5.2	89	0	25	88	25	6.7	92	1
WEST-CENTRAL												
CAMBRIDGE (HESPELER)	47	143	139	35.5	75	12	47	161	140	34.0	78	11
CENTRAL												
BRADFORD	21	196	15	16.6	91	6	211	443	210	21.0	95	9
SOUTHEASTERN												
CARLETON PLACE	22	38	26	12.3	68	4	22	60	26	23.7	60	9

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PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND						SUSPENDED SOLIDS					
	PLANT INFLUENT		PLANT EFFLUENT		REDUCTION		PLANT INFLUENT		PLANT EFFLUENT		REDUCTION	
	NO OF SAMPLES	AVG BOD MG/L	NO OF SAMPLES	AVG BOD MG/L	%	NO OF MONTHS EFFLUENT AVERAGE > 15 MG/L	NO OF SAMPLES	AVG SS CONC MG/L	NO OF SAMPLES	AVG SS CONC MG/L	%	NO OF MONTHS EFFLUENT AVERAGE > 15 MG/L
JAN/80-DEC/80												
OXIDATION DITCH												
SOUTHWESTERN												
PAISLEY	23	91	23	4.2	95	0	23	105	23	6.2	94	0
SOUTHAMPTON	24	157	24	2.9	98	0	72	92	77	9.7	89	0
WEST-CENTRAL												
GRAND VALLEY	39	151	39	3.8	97	0	87	209	83	10.0	95	2
HALDIMAND (CAYUGA)	23	103	23	2.2	97	0	23	149	23	6.2	95	0
WOOLWICH (ST.JACOBS)	29	413	29	21.7	94	1	102	201	102	24.2	87	9
CENTRAL												
FENELON FALLS	13	69	12	9.2●	86	3	13	102	13	11.7	88	2
HASTINGS	12	800●	12	10.1●	98	2	12	3557●	12	10.1●	99	2
NORWOOD	19	74	19	4.1	94	1	19	100	19	7.4	92	1

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PLANT PERFORMANCE

PROJECT	BIOCHEMICAL OXYGEN DEMAND						SUSPENDED SOLIDS					
	PLANT INFLUENT		PLANT EFFLUENT		REDUCTION		PLANT INFLUENT		PLANT EFFLUENT		REDUCTION	
	NO OF SAMPLES	AVG BOD MG/L	NO OF SAMPLES	AVG BOD MG/L	%	NO. OF MONTHS EFFLUENT AVERAGE >15 MG/L	NO OF SAMPLES	AVG SS CONC MG/L	NO OF SAMPLES	AVG SS CONC MG/L	%	NO. OF MONTHS EFFLUENT AVERAGE >15 MG/L
JAN/80-DEC/80 (TERTIARY TREATMENT) EFFLUENT FILTRATION												
SOUTHWESTERN												
*PETROLIA	15	68●	14	1.8●	97	0	15	73●	15	5.2●	92	1
STRATFORD	52	100	51	4.6	95	0	51	187	52	3.4	98	0
WEST-CENTRAL												
ORANGEVILLE	39	87	38	3.1	96	0	91	141	84	5.4	96	0
SIMCOE	25	185	25	4.2	97	0	71	182	70	3.7	97	0

OTHER MACRO-NUTRIENTS

The arithmetic mean of the monthly values for total phosphorus and nitrogen in free ammonia, total kjeldahl, nitrate and nitrite are shown for plant effluent and effluent.

Phosphorus averages marked with a dot (•) are based upon less than twelve months of data.

Projects marked with an asterisk (*) are those which have started up, have switched operating mode, or have changed operating authority during 1980.

The wastewater treatment plants are grouped together by Ministry Region under each category of treatment type such a Primary or Conventional Secondary headings.

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 022

OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/80-DEC/80										
PRIMARY										
SOUTHWESTERN										
OWEN SOUND	3.9	1.1	28	9.3	40	15.5	.31	.91	.10	.12
POINT EDWARD	33.5●	4.9●	–	–	48	29.1	–	–	–	–
WEST-CENTRAL										
NANTICOKE (PORT DOVER)	8.6	.8	24	11.3	59	18.4	.17	.30	.07	.04
CENTRAL										
*MIDLAND	24.0●	10.8●	17	11.3	27	18.6	.90	3.70	1.37	1.24
SOUTHEASTERN										
CORNWALL	3.2	2.2	7	7.1	14	13.4	.26	.26	.02	.03
PETAWAWA	6.3	2.3	–	–	31	24.5	–	–	–	–
PRESCOTT	5.0	.6	–	–	17	12.7	–	–	–	–
NORTHEASTERN										
ESPANOLA	8.1●	3.8●	–	–	32	25.7	–	–	–	–
SAULT STE MARIE	4.9●	2.9●	–	–	25	17.5	–	–	–	–
PARRY SOUND	6.1	1.6	–	–	–	–	.13	.62	.04	.59
NORTHWESTERN										
FORT FRANCES	2.9	2.5●	–	–	17	17.1	–	–	–	–

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OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/80-DEC/80										
CONVENTIONAL SECONDARY										
SOUTHWESTERN										
INGERSOLL (PLANT A)	8.7	1.3	–	–	–	2.6	–	–	–	–
INGERSOLL (PLANT B)	8.7	1.2	–	–	34	24.3	–	–	–	–
ST MARY'S	7.8	1.3	11	13.3	40	18.6	.25	.19	.07	.08
TILLSONBURG	5.4	.5	22	1.0	32	1.6	.17	16.29	.04	.07
TUCKERSMITH (VAN ASTRA)	3.1	.9	17	3.2	22	3.8	.28	6.88	.06	.54
WALLACEBURG	4.8	.6	19	3.1	27	4.9	.15	10.75	.19	1.03
WEST-CENTRAL										
BRANTFORD	5.7	.7	13	6.0	28	8.1	.10	4.30	.01	.57
CAMBRIDGE (GALT)	6.0	.7	21	8.3	33	9.9	.10	2.34	.04	.66
CAMBRIDGE (PRESTON)	8.1	.6	–	1.2	36	4.3	–	13.02	–	.71
DELHI	6.8	.2	26	10.8	40	13.3	.13	3.75	.01	.20
DUNNVILLE	4.2	.4	12	1.2	28	3.2	.14	7.21	.10	.41
FERGUS	7.5	.7	25	8.1	43	13.3	.09	6.46	.06	.66
HALDIMAND (CALEDONIA)	6.5	.7	30	12.1	43	14.5	.11	5.45	.02	5.68
HALDIMAND (HAGERSVILLE)	3.4	.8	18	10.3	25	11.6	.29	2.30	.08	.15
KITCHENER	7.6	.5	23	7.0	40	6.9	.11	18.55	.01	1.38
WATERLOO	6.3	.9	20	7.3	38	9.0	.10	9.70	.02	1.57
WOOLWICH (ELMIRA IND.)	2.2	–	22	–	37	–	2.50	–	.05	–
WOOLWICH (ELMIRA TOWN)	7.5	–	–	–	–	–	–	–	–	–
WOOLWICH (TOWN & IND)	7.5	2.0	25	23.7	46	30.8	.80	1.17	.12	1.04
PALMERSTON	3.2	2.2	17	10.1	23	13.6	.53	.57	.11	.13
CENTRAL										
CAMPBELLFORD	3.0	.9	12	1.0	23	2.3	.27	4.56	.18	.50
MISSISSAUGA SOUTH-PEEL LAKEVIEW	9.9	1.0	13	6.4	36	10.0	.10	5.25	.05	2.33
SOUTHEASTERN										
BELLEVILLE	9.1	.9	42	8.3	40	13.2	.30	.71	.07	.27
KINGSTON TWP	6.2	2.0	21	7.2	33	16.3	.46	10.70	.10	2.69
SIDNEY TWP (BATAWA)	3.5●	1.0●	10	.8	15	2.8	.56	3.15	.08	.01
TRENTON	6.8	.5	–	–	24	14.8	–	–	–	–
NORTHEASTERN										
NORTH BAY	11.4	1.3	–	–	47	14.6	–	–	–	–
STURGEON FALLS	3.1	.5	14	3.8	21	5.5	.13	4.30	.01	.16
#VALLEY EAST	18.6●	3.0●	27	25.1	38	26.1	.47	2.25	.06	.12

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OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/80-DEC/80										
EXT AERATION/CONT STABLIZATION										
SOUTHWESTERN										
DRESDEN	5.9	.4	19	.1	31	1.3	.68	17.29	.20	.03
MAIDSTONE (BELLE RIVER)	2.2	.2	18	.6	27	1.4	.17	14.30	.04	.02
MILDMAY	8.1	.7	32	.1	45	.9	.77	27.67	.03	.01
MOORE (CORUNNA)	9.3	1.0	–	–	29	1.7	–	–	–	–
MOORE (COURTRIGHT)	9.4●	1.3●	–	–	60	3.4	–	–	–	–
WESTMINSTER TWP	6.5	.6	22	3.5	34	5.2	.11	7.10	.05	.60
WEST-CENTRAL										
ELORA	9.5●	.9●	28	20.6	46	28.6	.11	.17	.04	.05
NORTH DUMFRIES (P.V.AYR)	5.6●	1.1●	–	1.7	41	4.0	–	26.25	–	.52
PARIS	5.7	2.0	14	8.3	30	14.0	.10	.30	.05	5.10
WELLESLEY	7.6	.7	30	.1	48	1.5	.25	26.38	.04	.02
WILMOT (BADEN)	17.3●	1.3	15	4.6	39	5.8	.10	6.53	.02	1.12
CENTRAL										
ALLISTON	7.3	4.4	16	.6	35	3.3	.14	12.32	.02	.43
COLDWATER	6.1	4.1	23	.1	31	2.1	.14	20.16	.02	.13
MILLBROOK	6.3	.3	29	.5	37	1.6	.10	15.75	.02	.02
MISSISSAUGA SOUTH-PEEL CLARKSON	8.5	1.0	17	.6	35	2.1	.57	9.21	.47	.17
PORT MCNICOLL	4.4	.7	18	.8	28	2.3	.20	10.50	.08	.22
SMITH TOWNSHIP	3.0	1.9●	8	.1	19	1.2	1.28	11.40	2.22	.05
SOUTHEASTERN										
BANCROFT	2.7	2.8	–	–	17	1.3	–	–	–	–
BARRY'S BAY	9.6	.7	13	2.5	63	3.1	2.53	10.08	.11	.18
CHALK RIVER	12.8	4.8	–	–	38	11.9	–	–	–	–
*COBDEN	6.0●	1.7●	–	–	32	1.4	–	–	–	–
DESERONTO	5.9	.7	21	.6	30	2.0	–	6.90	–	.21
EGANVILLE	7.2	3.8	–	–	41	1.7	–	–	–	–
ERNESTOWN (ODESSA)	3.1	1.3	–	–	22	2.3	–	–	–	–
FRANKFORD	3.9●	1.5●	22	4.1	30	6.7	13.25	3.54	.32	14.26
HAGARTY & RICHARDS(KILLALOE)	17.6	4.1	30	7.3	91	9.3	1.82	18.13	.91	1.68
L'ORIGNAL	4.5	4.1●	–	–	23	6.1				
MARMORA	4.9	.7	–	–	29	1.8	–	–	–	–
MERRICKVILLE	6.9	1.9	–	–	40	5.4	–	–	–	–
PITTSBURG (CANA)	5.9	3.3	16	.8	21	1.4	3.05	–	.03	.06
NORTHEASTERN										
BLACK RIVER - MATHESON	2.9●	1.6●	–	–	20	1.9	–	–	–	–

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OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/80-DEC/80										
BLIND RIVER	4.8	3.3	–	–	–	–	–	–	–	–
HAILEYBURY	5.8●	1.9●	–	–	34	8.2	–	–	–	–
IROQUOIS FALLS	5.4●	3.7●	–	–	30	15.6	–	–	–	–
KIRKLAND LAKE	3.8●	1.9●	–	–	20	9.0	–	.01	–	.06
LATCHFORD	4.1●	1.0●	16	.3	25	2.0	.78	11.60	.20	.03
MOOSONEE (NORTH)	4.1●	.3●	–	–	–	–	–	–	–	–
MOOSONEE DEV'L AREA BD	5.2●	.7●	–	–	3	7.4	–	–	–	–
*RAYSIDE-BALFOUR (AZILDA)	4.0●	3.0●	17	4.9	26	5.7	.52	13.30	.09	1.10
SMOOTH ROCK FALLS	4.7●	2.7	–	–	32	1.7	–	–	–	–
*RAYSIDE-BALFOUR(CHLMSF'D NORTHWESTERN	5.7●	1.9●	21	.8	29	3.8	.10	10.66	.01	1.07
EAR FALLS	5.2	1.4	–	–	25	7.7	–	–	–	–
GERALDTON	4.3●	1.8●	–	–	–	–	–	–	–	–
IGNACE	15.6	1.2	–	–	32	1.7	–	–	–	–
LONGLAC	5.8●	3.1	–	–	–	–	–	–	–	–
LONGLAC SECTION A	6.1●	3.0●	–	–	–	–	–	–	–	–
LONGLAC SECTION B	5.6●	3.3●	–	–	–	–	–	–	–	–
PICKLE LAKE	1.4	2.1●	–	–	8	1.3	–	–	–	–
RED LAKE	3.5●	2.6●	–	–	–	–	–	–	–	–
SCHREIBER	6.0	3.2	31	–	34	4.2	.10	6.33	.01	.01
MODIFIED SECONDARY										
SOUTHEASTERN										
HAWKESBURY	3.1●	1.0●	7	22.8	20	4.7	.36	5.26	.04	.09

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OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/80-DEC/80										
HIGH RATE										
SOUTHWESTERN										
MEAFORD	3.3	1.9	11	.2	17	1.2	.51	9.41	.06	.28
WEST-CENTRAL										
CAMBRIDGE (HESPELER)	5.3	.9	–	16.6	28	21.8	1.50	2.55	3.00	3.01
CENTRAL										
BRADFORD	8.1	.9	22	3.5	45	5.6	.10	18.00	.05	1.70
SOUTHEASTERN										
CARLETON PLACE	2.6	1.0	–	–	12	5.3	—	–	–	–

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OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/80-DEC/80										
OXIDATION DITCH										
SOUTHWESTERN										
PAISLEY	6.1	1.0	29	.1	38	1.2	.16	16.00	.07	.06
SOUTHAMPTON	7.4	2.7	17	.2	29	1.1	.18	14.88	.03	.12
WEST-CENTRAL										
GRAND VALLEY	9.7	.7	53	4.1	71	5.2	.10	11.97	.03	.11
HALDIMAND (CAYUGA)	7.2	.8	28	.1	41	1.4	.25	25.16	.09	.03
WOOLWICH (ST.JACOBS)	8.7	1.1	12	3.7	32	6.5	.15	2.27	.03	.16
CENTRAL										
FENELON FALLS	4.1	.5	15	1.3	22	3.0	.10	8.61	.01	.57
HASTINGS	86.1●	1.2	36	14.7	305	18.6	.30	7.43	.08	.38
NORWOOD	4.7	.9	25	.4	34	2.5	.62	20.63	.13	2.08

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OTHER MACRO-NUTRIENTS

PROJECT	TOTAL PHOSPHORUS INFLUENT MG/L P	TOTAL PHOSPHORUS EFFLUENT MG/L P	AMMONIA INFLUENT MG/L N	AMMONIA EFFLUENT MG/L N	TOTAL KJELDAHL N INFLUENT MG/L N	TOTAL KJELDAHL N EFFLUENT MG/L N	NITRATE INFLUENT MG/L N	NITRATE EFFLUENT MG/L N	NITRITE INFLUENT MG/L N	NITRITE EFFLUENT MG/L N
JAN/80-DEC/80										
TERTIARY TREATMENT										
EFFLUENT FILTRATION										
SOUTHWESTERN										
*PETROLIA	5.5●	1.3●	–	–	24	1.0	–	–	–	–
STRATFORD	4.8	.5	13	4.1	22	5.2	.26	9.62	.14	.47
WEST-CENTRAL										
ORANGEVILLE	6.0	.6	17	8.3	27	10.6	.10	7.41	.08	.30
SIMCOE	7.0	.4	12	1.7	28	2.4	.11	11.58	.01	.16

OPERATION - DATA LAGOONS

The annual flow and average daily influent flow are shown on the following table.

The BOD, SS, total phosphorus and total kjeldahl nitrogen concentrations are for the lagoon influent and effluent.

When there are less than twelve months of data available for total flow, a dot (•) is used.

Projects marked with an asterisk (*) are those which have started-up, have switched operating mode, or have changed operating authority during 1980.

The waste stabilization ponds are grouped together by Ministry Region under each category of treatment type such as Conventional Lagoon Annual Discharge or Exfiltration Lagoon headings.

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 028

OPERATION-DATA LAGOONS

PROJECT	<- FLOW -> TOTAL 1000 M3	AVG DAY 1000M3	<--- INFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOTAL P MG/L	TKN MG/L	<--- AERATION CELL ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	<--- EFFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOT P MG/L	TKN MG/L
JAN/80-DEC/80															
CONVENTIONAL LAGOON CONTINUOUS															
SOUTHWESTERN															
CHESLEY	461.0	1.26	12	84.6	75.5	3.7	22.9				12	9.7	5.2	2.2	5.8
WIARTON	668.3	1.83	12	60.5	98.8	3.2	13.5				12	13.3	21.6	1.9	6.8
WINGHAM	919.5	2.51	15	91.6	136.5	4.1	20.5				24	13.3	27.1	2.8	8.4
WEST-CENTRAL															
SHELBURNE	647.8	1.76	22	104.1	148.5	6.9	32.9				23	27.6	40.3	3.3	16.2
NORTHEASTERN															
BLACK R.MATHESON (RAMORE)	52.5	.14	11	119.9	219.4	6.2	45.2				11	17.9	20.3	3.7	19.3
ENGLEHART	492.7	1.34	26	67.3	159.5	4.6	23.7				25	10.0	12.7	2.2	8.5
LITTLE CURRENT	201.0	.55	5	51.7	59.0	4.9	20.7				6	14.0	30.0	5.2	7.9
NEW LISKEARD	1654.3	4.52	24	156.6	155.3	5.9	22.7					24.8	24.5		
POWASSAN	•	.62	13	87.5	135.5	9.7	59.2				8	23.4	22.2	3.3	
NEW LISKEARD (CELL A-B)											23	23.6	25.1	3.8	11.3
NEW LISKEARD (CELL C-D)											12	26.4	22.2	4.3	
NEW LISKEARD (CELL E-F)											23	20.1	22.5	4.2	12.6

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OPERATION-DATA LAGOONS

PROJECT	<- FLOW -> TOTAL 1000 M3	AVG DAY 1000M3	<--- INFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOTAL P MG/L	TKN MG/L	<--- AERATION CELL ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	<--- EFFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOT P MG/L	TKN MG/L
JAN/80-DEC/80															
CONVENTIONAL LAGOON SEASONAL															
SOUTHWESTERN															
AYLMER	1479.2	4.06	25	161.3	141.5	12.2	29.8				53	12.6	21.4	2.7	7.1
BELMONT	100.3	.28	25	151.6	153.2	11.0	51.7				9	1.9	4.6	.1	1.7
DUNDALK	261.6	.71	7	86.6	89.0	4.8	32.8				16	6.7	14.5	.5	6.4
DUTTON	138.8	.37	13	144.8	124.5	9.2	59.1				13	13.8	28.5	.5	7.8
EAST ZORRA-TAVISTOCK	335.9	.92	11	442.0	292.3	13.9	40.8				18	31.5	78.9	2.8	17.6
ENNISKILLEN (OIL CITY)	20.0	.5	11	146.7	105.2	10.4									
FOREST	•	.79													
GLENCOE	148.5	.40	8	183.6	194.4	11.3	45.7				4	18.7	35.8	1.2	14.2
GOSFIELD N. (PV COTTAM)	82.3	.22	10	78.7	75.1	5.7	43.5				4	14.8	20.7	.4	3.6
HARROW	354.9	.97	28	157.0	249.4	7.5	48.1				32	11.3	26.1	.9	5.4
HENSALL	132.5	.36		125.0	133.4	7.4						7.6	7.3	1.3	
LUCAN	203.7	.55	14	72.3	66.2	5.5					14	16.4	43.3	1.8	
MARKDALE	•		8	94.7	122.8	9.4	41.0				8	10.8	13.9	1.3	10.2
MILVERTON	231.8	.63	24	563.5	435.0	16.1	48.4				29	26.8	87.9	1.8	22.5
MITCHELL	598.0	1.63	10	212.5	274.6	12.6	24.3				5	15.5	27.7	1.8	7.8
MOORE (BRIGDEN)	5.2	.1	9	233.4	245.6	10.6	52.4	8	3.2	3.6		.6	3.5	.2	
NORMANBY	22.2	.60	23	166.4	162.6	8.2	53.6								
NORWICH	254.8	.69		248.0	644.8	8.2						15.6	43.3	1.2	
OIL SPRINGS	63.8	.17	11	108.5	129.7	8.5									
PORT STANLEY	311.6	.85	25	94.6	77.1	4.1	27.8				42	11.1	37.6	.7	5.8
RALEIGH TILBURY E(MERLIN	58.9	.16	12	341.7	1047.6	11.6	72.1				4	10.4	30.1	.6	4.4
RIDGETOWN	303.4	.83	5	134.0	200.0	6.3	30.0					16.3	82.3	.7	
RODNEY	119.1	.32	20	384.7	311.2	9.7	83.9				6	31.8	94.4	1.3	15.9
SARNIA (BRIGHTS GROVE)	187.2	.51	10	148.3	144.5	7.8	86.4				1	14.8	28.0	2.3	2.6
SEAFORTH	533.9	1.46	12	63.9	61.4	4.1	25.0				5	7.8	13.8	1.0	7.8
SOMBRA (PORT LAMBTON)	12.1	.03	10	94.8	153.1	7.5	37.4	10	6.0	23.0	3	4.7	8.6	1.2	
SOMBRA (PORT SOMBRA)	6.1	.16	10	110.6	146.1	6.5	39.3	10	5.6	21.4	2	7.5	44.7	.7	
TILBURY NORTH (STONEY POINT)	302.7	.82	12	32.5	28.7	2.9	18.1				4	9.0	24.0	.4	6.0
TILBURY WEST (PV COMBER)	103.1	.28	9	112.1	119.3	6.2	34.1				4	8.6	29.2	.7	7.5
WATFORD	208.3	.57	3	91.0	71.2	7.8	54.8				2	4.4	15.0	1.5	2.4
WEST LORNE	175.0	.47	13	82.1	243.5	4.3	30.3				9	7.2	11.8	1.4	9.3
ZURICH	138.0	.37		367.0	402.2	13.6						15.2	54.0	2.3	
WEST-CENTRAL															
ARTHUR	284.8	.78	11	220.5	246.5	7.4	45.3				14	14.4	53.8	1.0	13.0
HARRISTON	633.7	1.73	21	119.3	447.7	23.6	60.8				18	25.1	41.1	6.2	14.7
NANTICOKE (JARVIS)	217.1	.59	11	150.1	138.2	6.8	38.8				23	13.8	30.7	.5	7.9
NORFOLK (PORT ROWAN)	96.2	.26	2	135.0	170.0	5.9	37.5				6	2.8	9.3	.2	11.0
WILMOT (NEW HAMBURG)	428.5	1.17	24	142.3	243.8	9.3	56.9				25	18.6	41.5	3.0	22.2
CENTRAL															
BEETON	305.8	.84	18	79.3	157.5	6.9	42.6								

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OPERATION-DATA LAGOONS

PROJECT	<- FLOW -> TOTAL 1000 M3	AVG DAY 1000M3		<--- INFLUENT ---> NO OF SAMP (EOO)	BOD MG/L	SUSP SOL MG/L	TOTAL P MG/L	TKN MG/L	<--- AERATION CELL ---> NO OF SAMP (BOO)	BOD MG/L	SUSP SOL MG/L	<--- EFFLUENT ---> NO OF SAMP (300)	BOD MG/L	SUSP SOL MG/L	TOT P MG/L	TKN MG/L
JAN/80-DEC/80																
HAVELOCK	208.6	.57		8	124.6	165.4	8.8	50.3	6	7.2	14.1					
*LAKEFIELD	•	1.18		4	83.5	105.0	7.1	38.3								
SOUTHEASTERN																
CASSELMAN	208.4	.57		21	135.5	180.4	7.5	35.9				15	7.0	20.6	.8	2.7
CHESTERVILLE	252.2	.69		13	70.0	95.8	4.6	24.1				10	18.0	34.8	3.0	8.6
ERNESTOWN(AMHERSTVIEW)	993.0	2.71		32	87.8	105.6	78.6	28.2	2	9.5	25.0	30	20.1	55.4	3.1	9.5
GOULBOURN (RICHMOND)	548.9	1.50		22	92.5	128.6	5.9	27.7				19	14.3	20.3	1.5	6.4
LANCASTER	146.2	.40		12	144.0	372.3	6.0	31.7								
MADOC	295.3	.81		19	109.9	195.3	7.0	33.4				14	6.7	11.8	.5	2.3
PLANTAGENET	180.3	.49		35	117.1	113.9	6.6	33.2				14	20.5	19.4	2.7	6.2
ROCKLAND	369.0	1.01		32	54.2	58.9	4.3	28.9				8	15.0	24.0	3.2	17.0
RUSSELL	40.6	.11		25	261.0	294.0	10.6	53.5								
ST. ISIDORE DE PRESCOTT	75.3	.21		22	231.5	221.7	10.6	56.7				2	2.0	12.5	.5	
STIRLING	•															
TWEED	•															
VANKLEEK HILL	244.1	.67		22	158.0	190.6	7.2	34.3				21	5.2	13.4	1.7	2.7
WESTPORT	89.5	.24		3	78.0	67.5	5.0	26.3				17	8.0	10.5	.4	3.4
WINCHESTER	304.3	.83		14	90.8	176.4	6.0	26.5				8	13.4	58.8	2.9	9.6
NORTHEASTERN																
ASSIGINACK(MANITOWANING)	87.4	.24		21	50.1	75.8	4.1	27.9				5	15.1	51.0	1.9	7.2
BLACK R. MATHESON (V.G.)	•			21	58.2	97.0	4.8	19.1				20	7.9	16.4	2.1	5.0
BRUCE MINES	108.5	.30		21	81.8	127.3	5.2	28.9				10	15.7	38.1	1.8	8.4
BURKS FALLS	108.5	.30		8	88.3	81.8	5.3	38.0				6	5.4	18.4	3.4	5.6
CALDWELL (VERNER)	179.4	.49		15	71.1	187.1	4.4	24.4				22	10.6	20.4	.7	9.7
*CASIMIR-JENNINGS-APPLEBY	•	.10		3	56.5	106.3	3.4	25.0								
FAUQUIER (MOONBEAM)	•	.38		8	361.0	610.0	8.0	33.4				3	3.6	35.0	1.3	5.8
*GORE BAY	•	.20		3	94.8	92.5	3.4	15.3								
HAILEYBURY (N.COBALT)	•	.34		15	113.0	144.7	6.0	48.9				2	12.0	16.5	2.1	
MICHIPICOTEN (WAWA)	780.0	2.14		3	53.5	82.5	4.5									
NORTHHIMSWORTH(CALLANDER	192.2	.53		15	105.5	112.7	7.4	34.7				19	2.8	8.9	.3	5.6
OWENS,WILLIAMSON-IDING'T	•	.32														
RATTER&DUNNETT (WARREN)	88.9	.24		11	154.1	266.4	6.9	34.1				6	8.0	11.7	1.3	4.8
SHACKLETON&MACHIN (FAUQ)	126.9	.35		7	139.4	148.6	4.6	25.6				6	12.2	24.0	.9	7.0
WEBBWOOD	•	.07		16	122.8	109.9	10.0	63.6				1	12.0	42.0	2.5	6.0
HEARST	1215.0	3.33		12	92.1	241.4	10.1	31.8				9	9.6	27.6	.7	5.6
TEMAGAMI	10.2	03		3	165.0	191.7	11.3	70.5								
NORTHWESTERN																
ATWOOD (RAINY RIVER)	356.0	1.00		24	34.6	75.0	3.0	15.0				22	8.2	62.0	.9	6.3
EMO	144.7	.40	11	18	116.4	174.3	7.1	37.8				7	31.3	54.1	2.7	18.1

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PROJECT	<- FLOW -> TOTAL 1000 M3	AVG DAY 1000M3	<--- INFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOTAL P MG/L	TKN MG/L	<--- AERATION CELL ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	<--- EFFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOT P MG/L	TKN MG/L
JAN/80-DEC/80															
CONVENTIONAL LAGOON ANNUAL															
SOUTHWESTERN															
DOVER (MITCHELL'S BAY)	33.8	.09	12	89.9	121.1	4.9	35.6								
ESSEX (N.E.)	275.9	.76	9	33.2	47.2	2.7	16.0				4	13.1	56.1	.6	4.0
ESSEX (S.W.)	718.5	2.00	8	26.1	29.7	2.5	15.1				6	19.9	30.2	1.0	3.7
WEST-CENTRAL															
DUNNVILLE (OSWEGO PARK)	54.2	.15	11	181.5	217.2	10.3	67.1				2	41.3	291.5	4.3	20.5
SOUTHEASTERN															
ALFRED	172.3	.47	36	133.3	128.6	7.7	38.3				15	9.2	21.0	2.1	8.3
NORTHEASTERN															
COSBY MASON & MARTLAND	66.0	.18	13	165.3	166.3	7.3	37.9								
SUNDRIDGE	196.0	.54	10	48.3	64.2	3.3	15.9				4	8.9	11.2	.3	3.2
THESSALON	295.7	.81	4	46.5	72.5	5.1	21.2				1	11.0	32.0		

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OPERATION-DATA LAGOONS

PROJECT	<- FLOW ->		<--- INFLUENT --->					<--- AERATION CELL --->			<--- EFFLUENT --->				
	TOTAL 1000 M3	AVG DAY 1000M3	NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOTAL P MG/L	TKN MG/L	NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOT P MG/L	TKN MG/L
JAN/80-DEC/80															
LAGOON AND SPRAY															
CENTRAL															
OMEMEE (SPRAY)	83.8	.23	12	90.6	119.2	5.4	40.7				6	9.1	9.8	2.9	5.2
SOUTHEASTERN															
LEEDS & LANSDOWNE	40.4	.11	1	90.0	95.0	8.0	55.0				6	1.6	6.5	.5	1.2

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OPERATION-DATA LAGOONS

PROJECT	<- FLOW -> TOTAL 1000 M3	AVG DAY 1000M3	<--- INFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOTAL P MG/L	TKN MG/L	<--- AERATION CELL ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	<--- EFFLUENT ---> NO OF SAMP (BOD)	BOD MG/L	SUSP SOL MG/L	TOT P MG/L	TKN MG/L
JAN/80-DEC/80															
AERATED CELL PLUS LAGOON															
SOUTHWESTERN															
DURHAM	420.8	1.15	23	147.2	430.0	5.0	31.9				23	30.2	36.7	4.0	21.7
KINCARDINE	893.3	2.45	25	113.7	98.4	6.4	35.2	21	23.5	17.3	25	10.7	7.3	3.3	11.2
LISTOWEL	1850.2	5.07	26	174.4	172.6	4.5	26.7	24	63.3	110.0	32	16.0	23.1	1.8	12.0
THORNBURY	457.9	1.25	30	422.9	165.5	2.3	10.4	25	63.6	92.9	26	22.9	25.1	1.4	4.0
WEST-CENTRAL															
NANTICOKE (WATERFORD)	483.6	1.33	23	57.0	39.5	2.6	19.2	23	45.3	53.3	23	19.1	42.7	2.0	11.5
SOUTHEASTERN															
ALEXANDRIA	1922.8	5.27	33	176.2	122.8	14.0	21.2	24	26.5	39.8	23	18.5	19.6	8.0	8.8
ALMONTE	756.3	2.07	25	141.2	117.5	7.0	30.9				22	14.9	23.9	3.1	5.3
EXFILTRATION LAGOON															
NORTHEASTERN															
MATTAWA	278.8	.76	15	56.7	79.7	2.8	21.1								

PROJECT STAFF

During 1980, the 205 wastewater treatment facilities employed a total of 377 staff. The fractional figures shown, arise from the joint operation of water and wastewater projects in the same municipality (see Water Supply 1980 Operating Summary) or employment of part-time staff.

PROJECT STAFF

PROJECT	SUPERINTENDENT	ASS'T SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
PRIMARY TREATMENT																
Region 1 - SOUTHWEST																
Owen Sound			1		3		1						.5			5.50
Point Edward			1		.5											1.50
Region 2 - WEST CENTRAL																
Nanticoke (Port Dover)			.8		.8											1.60
Region 4 - SOUTHEAST																
Cornwall	.5	.5			5	1	1									8.00
Petawawa			.34		2		.34									2.68
Prescott			1		1											2.00
Region 5 - NORTHEAST																
Espanola	.5				.5											1.00
Parry Sound	1				2											3.00
Sault Ste. Marie	1	1			6		1	1					.5			10.50
Region 6 - NORTHWEST																
Fort Frances	.7				2.9									1.0		4.60
CONVENTIONAL ACTIVATED SLUDGE																
Region 1 - SOUTHWEST																
Ingersoll			1		2								.25			3.25
St. Mary's			1		1								.25			2.25
Tillsonburg			1		2								.25			3.25
Tuckersmith (Van Astra)			.5		.5								.25			1.25
Wallaceburg			1		2.5	5	1						.45			5.00
Region 2 - WEST CENTRAL																
Brantford	1	1			6	1	2			1	1	2				15.00
Cambridge (Galt)	1				3		1			1						6.00
Cambridge (Preston)	1				2.4		1						.3			4.70
Delhi			1		.8											1.80
Dunnville			1		.9		1									2.90
Fergus			1		1											2.00
Haldimand (Caledonia)			1		1											2.00
Haldimand (Hagersville)			1		.5											1.50
Kitchener	1	1			8	1	3	1		1	1	2				19.00
Palmerston														.5		.50
Waterloo	1				4		2			1						8.00
Woolwich (Elmira)			.9		1.2											2.10
Region 3 - CENTRAL																
Campbellford	.25			1	2											3.25
Mississauga (Lakeview)	1		3	10	23	1	15	3	3	2	8	1	1		5	76.00
Region 4 - SOUTHEAST																
Belleville	.5	.5			3					1						5.00
Kingston Twp.	.5	.5			3	.5	.5									5.00
Sidney (Batawa)			.25		.25											.50
Trenton	1				3		1									5.00
Region 5 - NORTHEAST																
North Bay	1	1			5		2			1						10.00
Sturgeon Falls	1				2											3.00

PROJECT STAFF

PROJECT	SUPERINTENDENT	ASS'T SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
EXTENDED AERATION/CONTACT STABILIZATION																
Region 1 - SOUTHWEST																
Dresden			1		2								.25			3.25
Maidstone (Belle River)			1		2.25								.25			3.50
Mildmay																
Moore (Corunna)			1		.5											1.50
Moore (Courtright)					1											1.00
Westminster TWP			1										.50			1.50
Region 2 - WEST CENTRAL																
Paris			1										.2			1.20
Wellesley					.1								.5			.60
Wilmot (Baden)																
Region 3 - CENTRAL																
Alliston			.9		1.8											2.70
Coldwater	.3				1											1.30
Millbrook	.5				.4											.90
Mississauga (Clarkson)			1		4		1				1		1			8.00
Port McNicoll	.3													2		2.30
Smith (Woodland Acres)	.1													.7		.80
Region 4 - SOUTHEAST																
Bancroft			1		1											2.00
Barry's Bay			.34		.34											.68
Chalk River			.33		.75		.33									1.41
Cobden			.25		.25											.50
Deseronto					1									.5		1.50
Eganville			.25		.25											.50
Ernestown (Odessa)	.34			.34	.34								.68			1.70
Frankford			.5		.5											1.00
Hagarty-Richards (Killaloe)																
L'Original	.125	.125			.5											.75
Marmora			.5		.38											.88
Merrickville	.25				.5											.75
Pittsburg (Cana)	.25	.25			1											1.50
Region 5 - NORTHEAST																
Black River-Matheson (M)	.4												.25	.3		.95
Blind River			1													1.00
Haileybury	.25				.25		.5									1.00
Iroquois Falls	1				1								.25			2.25
Kirkland Lake	1				2											3.00
Latchford	.12				.5											.62
Moosonee (North)	.25				.5											.75
Moosonee (Old Townsite)	.25				.5											.75
Rayside-Balfour (Azilda)																
Smooth Rock Falls			.45													.45
Wicksteed (Hornepayne)	.75				1.25											2.00
Region 6 - NORTHWEST																
Ear Falls	.2				1									.5		1.70
Geraldton	1				1								1			3.00
Ignace			1										1			2.00
Longlac					1									1		2.00
Pickle Lake			1										1			2.00
Red Lake	.2				1									1		2.20
Schreiber			1											1		2.00
MODIFIED SECONDARY																
Region 4 - SOUTHEAST																
Hawkesbury	.5	.5			2		1						1			5.00

PROJECT STAFF

PROJECT	SUPERINTENDENT	ASS'T SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
HIGH RATE ACTIVATED SLUDGE																
Region 1 - SOUTHWEST																
Meaford			.5		1.5								.25			2.25
Region 2 - WEST CENTRAL																
Cambridge (Hespeler)			1		1.6								.3			2.90
Region 3 - CENTRAL																
Bradford			1		2											3.00
Region 4 - SOUTHEAST																
Carleton Place	.3				1											1.30
OXIDATION DITCH																
Region 1 - SOUTHWEST																
Paisley			1										.25			1.25
Southampton			.5		1								.25			1.75
Region 2 - WEST CENTRAL																
Grand Valley			.2		.5		.2						.1			1.00
Haldimand (Cayuga)					.5											.50
Woolwich (St. Jacobs)			.1		.1									.5		.70
Region 3 - CENTRAL																
Fenelon Falls			.5		1											1.50
Hastings	.25				1.5											1.75
Norwood	.25				1.5											1.75
TERTIARY TREATMENT																
Region 1 - SOUTHWEST																
Stratford	1			1	4		1						.25			7.25
Petrolia																
Region 2 - WEST CENTRAL																
Orangeville			.8		1.5		.8						.2			3.30
Simcoe	.8				1.8		1.3						.6			4.50

PROJECT STAFF

PROJECT	SUPERINTENDENT	ASS'T SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
WASTE STABILIZATION PONDS																
CONVENTIONAL LAGOON CONTINUOUS																
Region 1 - SOUTHWEST																
Chesley														.25		.25
Wiarton														.25		.25
Wingham														.25		.25
Region 2 - WEST CENTRAL																
Shelburne																
Region 5 - NORTHEAST																
Black R. Matheson (Ramore)	.1															
Englehart														.05		.15
Little Current														.25		.25
New Liskeard																
Powassan																
CONVENTIONAL LAGOON SEASONAL																
Region 1 - SOUTHWEST																
Aylmer															.5	.5
Belmont															.5	.5
Dundalk														.25		.25
Dutton														.25		.25
East Zorra (Tavistock)															.25	.25
Enniskillen (Oil City)														.5		.5
Forest														.25		.25
Glencoe														.25		.25
Gosfield N. (Cottam)														.25		.25
Harrow															.25	.25
Hensall														.25		.25
Lucan														.25		.25
Markdale																
Milverton																
Mitchell														.25		.25
Moore (Brigden)														.25		.25
Normanby (Neustadt)															.3	.30
Norwich																
Oil Springs														.25		.25
Port Stanley														.5		.50
Raleigh & Tilbury E (Merlin)															.5	.5
Ridgetown																
Rodney														.25		.25
Sarnia (Brights Grove)														.25		.25
Seaforth																
Sombra (Port Lambton)														.25		.25
Sombra (Port Sombra)															.3	.30
Tilbury North (Stoney Point)															.3	.30
Tilbury West (Comber)														.25		.25
Watford														.25		.25
West Lorne														.25		.25
Zurich														.25		.25

PROJECT STAFF

PROJECT	SUPERINTENDENT	ASS'T SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
CONVENTIONAL LAGOONS/SEASONAL																
Region 2 - WEST CENTRAL																
Arthur														.35		.35
Harriston																
Nanticoke (Jarvis)			.2		.2											.40
Norfolk (Port Rowan)														.3		.30
Wilmot (New Hamburg)																
Region 3 - CENTRAL																
Beeton			.1		.2											.30
Havelock	.15													1		1.15
Region 4 - SOUTHEAST																
Casselman	.25				.25								.25			.75
Chesterville			.25		.25											.50
Ernestown (Amherstview)	.34			.34	.34								.68			1.70
Goulbourn (Richmond)	.10				.5											.60
Lancaster	.17	.17			.25											.59
Madoc					.125											.125
Plantagenet	.2				.6											.80
Rockland	.2				.6											.80
Russell	.25				.25								.25			.75
St. Isidore de Prescott	.25				.25								.25			.75
Stirling	.25	.25			.5											1.00
Tweed	.25	.25			.5											1.00
Vankleek Hill	.125	.125			.5											.75
West Port			.25										.5			.75
Winchester			.25		.25											.50
Region 5 - NORTHEAST																
Assiginack (Manitowaning)														.25		.25
Black R. Matheson (V.G.)	.10													.05		.15
Bruce Mines					.5											.50
Burks Falls														.35		.35
Caldwell (Verner)					.40											.40
Casimir, J., A. (St. Charles)														.25		.25
Fauquier (Moonbeam)			.15													.15
Gore Bay														.25		.25
Haileybury (N. Cobalt)	.25				.25											.50
Hearst	.10				.30											.40
Michipicoten (Wawa)																
North Himsworth (Callander)														.25		.25
Owens, W., I. (Val Rita)														.25		.25
Ratter Dunnet Warren														.13		.13
Shackleton & Machin (Fauq.)			.45													.45
Webbwood														.25		.25
Temagami														.50		.50
Region 6 - NORTHWEST																
Atwood (Rainy River)	.05				.20									.20		.45
Emo	.05													.20		.25

PROJECT STAFF

PROJECT	SUPERINTENDENT	ASS'T SUP'T.	CHIEF OPERATOR	SENIOR OPERATOR	OPERATOR	FOREMAN	MECHANIC	ELECTRICIAN	CONTROLS TECH.	LABORATORY TECH.	GROUNDSMAN/JANITOR	LABOURER	CASUAL	PART-TIME	OTHER	TOTAL
CONVENTIONAL LAGOON ANNUAL																
Region 1 - SOUTHWEST																
Dover (Mitchell's Bay)															.2	.2
Essex N.E.														.25		.25
Essex S.W.														.25		.25
Region 2 - WEST CENTRAL																
Dunnville (Oswego Park)					.1											.10
Region 4 - SOUTHEAST																
Alfred	.2				.6											.80
Region 5 - NORTHEAST																
Cosby, M., M. (Noelville)														.25		.25
Sundridge														.35		.35
Thessalon														.25		.25
LAGOON AND SPRAY																
Region 3 - CENTRAL																
Omemee	.1													2		2.10
Region 4 - SOUTHEAST																
Leeds & Lansdowne			.25													.25
AERATED CELL PLUS LAGOON																
Region 1 - SOUTHWEST																
Durham														.25		.25
Kincardine					1											1
Listowel			1													1
Thornbury	.5				.5											1
Region 2 - WEST CENTRAL																
Nanticoke (Waterford)	.2				.2		.2									.60
Region 4 - SOUTHEAST																
Alexandria	.16	.16			.5											.82
Almonte	.2				.5		.1									.80
EXFILTRATION LAGOON																
Region 5 - NORTHEAST																
Mattawa																
EFFLUENT CHLORINATION																
Region 5 - NORTHEAST																
Temagami														.50		.50

OPERATING COST SUMMARY - MECHANICAL PLANTS

OPERATING EXPENDITURES - MECHANICAL PLANTS

OPERATING EXPENDITURES - LAGOONS

The unit operating costs for mechanical sewage treatment plants are shown. Figures marked with a dot (•) are yearly estimates based on less than twelve months of data.

Projects marked with an asterick (*) are those which have started-up during 1980.

OPERATING COST SUMMARY -- MECHANICAL PLANTS

PROJECT	TOTAL TREATED VOLUME 1000 m^3	TOTAL OPERATING COST dollars	UNIT OPERATING COSTS		
			$ / 1000m^3	¢/kgBODrem	¢/kg SS rem
PRIMARY TREATMENT					
Region 1 - SOUTHWEST					
Owen Sound	6664.8	350,859	53	124	38
Point Edward	678.7	83,178	123	107•	17•
Region 2 - WEST CENTRAL					
Nanticoke (Port Dover)	964.7	89,536	93	46•	27
Region 4 - SOUTHEAST					
Cornwall	16,982.1	600,675	35	81	49
Petawawa	1,120.3	140,085	125	98	107
Prescott	1,545.1	106.990	69	151	32
Region 5 - NORTHEAST					
Espanola	860.6	42,047	49	79•	28•
Parry Sound	1,793.4	159,043	89	326	155
Sault Ste. Marie	15,408.0	476,693	31	44	30
Region 6 - NORTHWEST					
Fort Frances	3,068.0	153,754	50	985•	117•
CONVENTIONAL ACTIVATED SLUDGE					
Region 1 - SOUTHWEST					
Ingersoll (Plant A+B)	1,696.0•	220,157	130	77	53
St. Mary's	1,045.8	168,152	161	42	27
Tillsonburg	1,688.2	176,003	104	133	60
Tuckersmith (Van Astra)	173.2	46,045	266	808	658
Wallaceburg	2,216.5	315,003	142	106	64
Region 2 - WEST CENTRAL					
Brantford	16,180.0	722,796	45	26	20
Cambridge (Galt)	10,988.5	497,637	45	44	32
Cambridge (Preston)	2,849.4	291,919	102	26	35
Delhi	813.2	100,990	124	115	83
Dunnville	1,472.5	143,169	97	66	73
Fergus	960.3	85,270	891	698	449
Haldimand (Caledonia)	681.6	90,408	133	159	82
Haldimand (Hagersville)	470.1	66,378	141	309	135
Kitchener	21,801.0	1,211,723	56	21	24
Palmerston	(DATA NOT AVAILABLE)	2,086			
Waterloo	12,147.6	599,597	49	28	27
Woolwich (Elmira)	1,494.2	90,989	61	32	25
Region 3 - CENTRAL					
Cambellford	2,403.4	120,396	50	86	45
Mississauga	82,736.8	6,029,520	73	34	23
Region 4 - SOUTHEAST					
Belleville	11,164.6	551,531	49	29	15
Kingston Twp.	5,031.0	300,029	60	49	30
Sidney (Batawa)	361.5	24,220	67	182•	202•
Trenton	4,350.5	389,396	90	70	52
Region 5 - NORTHEAST					
North Bay	11,751.9	602,032	51	38	16
Sturgeon Falls	2,292.8	141,869	62	138	82
MODIFIED SECONDARY					
Region 4 - SOUTHEAST					
Hawkesbury	2,740.7	261,685	95	312	236

OPERATING COST SUMMARY -- MECHANICAL PLANTS

PROJECT	TOTAL TREATED VOLUME 1000 m^3	TOTAL OPERATING COST dollars	UNIT OPERATING COSTS		
			$ / 1000m^3	¢/kgBODrem	¢/kg SS rem
EXTENDED AERATION/CONTACT STABILIZATION					
Region 1 - SOUTHWEST					
Dresden	436.3	145,004	332	320	102
Maidstone (Belle River)	1147.6	174,953	152	291	249
Mildmay	89.4	39,781	445	340	349
Moore (Corunna)	677.7	87,610	129	136*	105*
Moore (Courtright)	136.0	48,113	354	316*	227*
Westminster TWP	614.7	66,468	108	87	62
Region 2 - WEST CENTRAL					
North Dumfries (Ayr)*	51.4	34,176	665	579	462
Paris	703.8	57,857	82	45	56
Wellesley	134.1	29,643	221	253*	162
Wilmot (Baden)	189.9	36,020	190	71	110
Region 3 - CENTRAL					
Alliston	908.0	125,924	139	50	54
Coldwater	149.2	42,796	287	486	441
Millbrook	268.2	46,674	174	197	176
Port McNicoll	417.7	45,736	109	236	135
Smith (Woodland Acres)	95.2	34,803	366	821*	744*
Region 4 - SOUTHEAST					
Bancroft	361.0	94,642	262	782	509
Barry's Bay	163.1	55,413	340	92	114
Chalk River	142.7	36,423	255	309	276
Cobden*	61.4	25,569	416	555	568
Deseronto	346.5	56,280	162	173	144
Espanville	139.1	52,542	378	272	281
Ernestown (Odessa)	305.8	41,194	135	305	364
Frankford	312.2	60,761	195	355*	343*
Hagarty-Richards (Killaloe)	34.0	30,061	884	307	226
L'Original	368.0	33,134	90	197	147*
Marmora	171.4	42,885	250	322*	282*
Merrickville	144.4	41,166	285	343	310
Pittsburg (Cana)	29.2	7,574	259	473	421
Region 5 - NORTHEAST					
Black River-Matheson (M)	329.0	57,123	174	656	409*
Blind River	506.2	65,679	130	239	211
Haileybury	711.6	47,203	66	99*	64*
Iroquois Falls	1070.0	83,313	78	258*	53
Kirkland Lake	4043.2	223,645	55	139*	95*
Latchford	81.8	26,826	328	610*	455*
Moosonee (North)	45.8	25,438	555	500*	727*
Moosonee (Old Townsite)	219.2	63,492	290	329*	263*
Smooth Rock Falls	610.5	53,533	88	180	98
Wickstead (Hornepayne)	236.9	96,863	409	No data	978*
Region 6 - NORTHWEST					
Ear Falls	216.8*	77,504	357*	981*	1317*
Geraldton	462.4*	86,426	187*	486*	244*
Ignace	302.6	89,149	295	384*	78*
Longlac	401.1*	76,870	192*	294*	100*
Pickle Lake	232.8	57,201	246	1138*	665
Red Lake	671.0	86,268	129	304*	171*
Schreiber	443.6	52,655	119	174	59

OPERATING COST SUMMARY -- MECHANICAL PLANTS

PROJECT	TOTAL TREATED VOLUME 1000 m^3	TOTAL OPERATING COST dollars	UNIT OPERATING COSTS		
			$ / 1000m^3	¢/kgBODrem	¢/kg SS rem
HIGH RATE ACTIVATED SLUDGE					
Region 1 - SOUTHWEST					
Meaford	1026.6	99,375	97	220	116
Region 2 - WEST CENTRAL					
Cambridge (Hespeler	1973.3	150,884	76	74	61
Region 3 - CENTRAL					
Bradford	1045.6	158,500	152	86	36
Region 4 - SOUTHEAST					
Carleton Place	2603.0	89,473	34	130	93
OXIDATION DITCH					
Region 1 - SOUTHWEST					
Paisley	118.7	40,939	345	394	350
Southampton	489.1	83,334	170	119	210
Region 2 - WEST CENTRAL					
Grand Valley	92.1	44,177	480	342	250
Haldimand (Cayuga)	173.2	31,674	185	129	129
Woolwich (St. Jacobs)	406.1	46,093	114	30	74
Region 3 - CENTRAL					
Fenelon Falls	364.8	76,070	208	345*	219
Hastings	190.1	97,855	515	65*	15*
Norwood	153.0	59,642	390	568	426
TERTIARY TREATMENT					
Region 1 - SOUTHWEST					
Petrolia*	660.3	144,559	218	328*	321*
Stratford	7512.5	333,093	44	47	25
Region 2 - WEST CENTRAL					
Orangeville	2459.5	191,935	78	94	58
Simcoe	4164.9	278,173	67	37	37

OPERATING EXPENDITURES ---- MECHANICAL PLANTS

(CREDIT)

PROJECT	GRAND TOTAL	REGULAR STAFF	UNCLASS STAFF	INTER BRANCH TRANSFER	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	REPAIRS AND MAINT'CE	SLUDGE HAULAGE
PRIMARY TREATMENT										
Region 1 - SOUTHWEST										
Owen Sound	350,859	99,087	11,469	(827)	109,729	23,048	4,540	2,795	4,146	23,056
Point Edward	83,178	59,068	11,683	(37,384)	33,367	7,476	1,931	1,019	1,413	2,235
Region 2 - WEST CENTRAL										
Nanticoke (Port Dover)	89,536	37,043	3,293	(3,146)	37,190	4,774	1,307	1,248	1,971	6,136
Region 4 - SOUTHEAST										
Cornwall	600,675	177,670	3,997	(19,362)	162,305	21,031	7,088	2,578	9,121	32,740
Petawawa	140,085	93,110	3,634	(39,096)	57,648	2,806	4,126	-	2,352	715
Prescott	106,990	41,422	-	-	41,422	6,128	2,372	946	2,079	841
Region 5 - NORTHEAST										
Espanola	42,047	28,075	-	(11,758)	16,317	1,817	1,174	602	1,320	1,701
Parry Sound	159,043	63,656	-	-	63,656	9,739	4,669	924	3,919	2,067
Sault Ste. Marie	476,693	194,851	4,889	(2,460)	197,280	29,049	4,577	4,297	9,647	21,319
Region 6 - NORTHWEST										
Fort Frances	153,754	83,001	2,776	(12,698)	73,079	16,485	3,857	1,656	4,021	6,434
CONVENTIONAL ACTIVATED SLUDGE										
Region 1 - SOUTHWEST										
Ingersoll	220,157	59,328	10,878	652	70,858	20,909	3,404	1,653	13,620	10,479
St. Mary's	168,157	41,694	8,816	24,193	59,192	6,328	3,372	124	1,585	2,079
Tillsonburg	176,003	63,076	4,887	(4,265)	63,698	9,872	4,551	1,063	1,053	8,784
Tuckersmith (Van Astra)	46,045	42,355	1,768	(21,657)	22,466	2,707	2,153	1,563	-	-
Wallaceburg	315,003	101,189	2,893	(13,196)	90,886	15,658	4,758	1,999	952	39,581
Region 2 - WEST CENTRAL										
Brantford	722,796	271,802	5,325	39	277,166	52,336	4,302	7,706	11,265	19,560
Cambridge (Galt)	497,637	135,692	3,154	266	139,112	23,829	5,884	2,579	3,934	85,812
Cambridge (Preston)	291,919	114,383	3,274	(13,119)	104,538	13,953	4,877	1,162	216	37,563
Delhi	100,990	41,440	1,918	(4,954)	38,404	4,766	2,739	1,038	650	11,748
Dunnville	143,169	61,972	-	(172)	61,800	9,524	1,741	1,060	4,245	5,908
Fergus	85,270	40,862	2,944	(4,546)	39,260	4,869	2,111	627	2,894	6,446
Haldimand (Caledonia)	90,408	41,355	-	(263)	41,092	6,171	2,381	784	389	5,348
Haldimand (Hagersville)	66,378	41,319	3,634	(11,233)	33,720	2,777	28	488	547	6,097
Kitchener	1,211,723	364,398	10,022	-	374,420	56,733	8,103	11,529	1,717	328,219
Palmerston	2,086	-	-	748	748	240	185	256	-	-
Waterloo	599,597	173,744	3,065	(5,273)	171,536	26,176	4,640	3,200	1,578	105,565
Woolwich (Elmira)	90,989	51,080	-	(14,987)	36,093	4,541	2,343	905	1,117	7,359
Region 3 - CENTRAL										
Campbellford	120,396	97,247	-	(36,842)	60,405	2,830	4,784	1,022	4,641	4,725
Mississauga	6,029,520	1,466,648	66,846	2,851	1,536,345	233,753	20,161	44,553	222,695	948,372
Region 4 - SOUTHEAST										
Belleville	551,531	198,870	-	(3,674)	195,196	29,825	2,644	3,404	18,111	59,028
Kingston Twp.	300,029	191,196	2,336	(103,888)	89,644	16,269	3,799	2,266	2,279	25,100
Sidney (Batawa)	24,220	-	-	9,942	9,942	3,155	1,169	234	-	48
Trenton	389,396	100,308	6,247	653	107,208	14,749	3,211	4,850	50	53,915
Region 5 - NORTHEAST										
North Bay	602,032	202,435	-	(3,140)	199,295	30,940	12,962	5,262	24,555	7,487
Sturgeon Falls	141,869	63,818	5,348	(11,421)	57,745	5,953	2,381	6,295	7,221	9,047

OPERATING EXPENDITURES ------- MECHANICAL PLANTS (CREDIT)

PROJECT	OTHER SERVICES	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TR'S CT'NS
PRIMARY TREATMENT										
Region 1 - SOUTHWEST										
Owen Sound	4,632	34,629	9,992	97,050	53,793	18,078	178,913	-	-	-
Point Edward	1,357	6,024	8,059	8,855	10,357	4,003	32,074	-	-	2,306
Region 2 - WEST CENTRAL										
Nanticoke (Port Dover)	2,387	11,742	755	13,658	12,175	7,735	34,323	200	-	-
Region 4 - SOUTHEAST										
Cornwall	18,207	62,646	55,896	164,213	54,700	39,803	314,612	985	-	32,008
Petawawa	7,857	10,924	10,498	17,266	10,495	26,322	64,581	-	-	-
Prescott	6,052	9,918	432	14,948	20,983	8,522	44,885	-	-	2,265
Region 5 - NORTHEAST										
Espanola	955	4,578	1,275	1,467	11,194	4,225	18,161	-	-	-
Parry Sound	2,083	8,993	2,446	22,208	33,135	14,197	71,986	-	-	-
Sault Ste. Marie	3,293	38,556	9,398	48,685	118,884	16,682	193,445	-	-	13,786
Region 6 - NORTHWEST										
Fort Frances	3,217	15,328	3,483	7,366	16,099	18,057	45,005	-	-	-
CONVENTIONAL ACTIVATED SLUDGE										
Region 1 - SOUTHWEST										
Ingersoll	5,222	30,974	22,680	11,903	45,427	8,692	88,702	105	-	5,205
St. Mary's	1,972	27,988	30,885	11,290	24,629	8,156	74,960	-	-	2,143
Tillsonburg	7,219	18,119	20,937	20,169	27,546	11,111	79,763	-	-	-
Tuckersmith (Van Astra)	2,650	4,213	1,504	3,208	6,223	2,880	13,815	-	-	691
Wallaceburg	13,334	55,866	6,719	138,898	42,474	(45,619)	142,472	-	-	5,363
Region 2 - WEST CENTRAL										
Brantford	17,128	55,659	2,224	94,440	184,271	30,512	311,447	-	-	21,886
Cambridge (Galt)	9,687	102,012	4,218	65,197	112,061	26,319	207,788	-	-	19,012
Cambridge (Preston)	2,056	40,997	16,044	21,495	62,184	16,951	116,674	-	-	10,880
Delhi	598	14,034	5,336	13,972	12,328	9,411	41,047	-	-	-
Dunnville	224	11,437	4,546	8,352	39,796	5,973	58,667	-	-	-
Fergus	243	10,210	1,663	6,677	15,739	4,741	28,820	-	-	-
Haldimand (Caledonia)	679	7,200	3,845	8,733	11,573	9,413	33,564	-	-	-
Haldimand (Hagersville)	475	7,607	2,710	4,173	6,701	8,662	22,246	-	-	-
Kitchener	6,878	348,343	7,429	121,509	214,458	80,728	424,124	-	-	-
Palmerston	62	318	157	-	-	438	595	-	-	-
Waterloo	12,386	122,729	17,019	44,346	153,978	23,639	238,982	-	-	35,534
Woolwich (Elmira)	1,545	10,926	946	12,305	13,776	6,574	33,601	-	-	3,485
Region 3 - CENTRAL										
Campbellford	2,059	12,447	2,304	1,750	16,751	16,181	36,986	-	-	2,944
Mississauga	110,236	1,325,856	340,901	513,153	1,798,584	159,468	2,812,106	28	(432)*	102,103
Region 4 - SOUTHEAST										
Belleville	8,909	89,452	2,035	65,464	110,624	26,191	204,314	160	-	29,940
Kingston Twp.	3,241	32,886	4,826	36,236	105,233	11,136	157,431	-	-	-
Sidney (Batawa)	30	312	1,194	2,288	4,627	1,533	9,642	-	-	-
Trenton	1,316	60,131	393	31,499	81,588	38,004	151,424			52,673
Region 5 - NORTHEAST										
North Bay	5,156	42,460	594	44,645	151,484	98,462	295,185	140	-	21,050
Sturgeon Falls	2,808	25,371	-	6,549	31,919	8,026	46,494	-	-	3,925

* RECOVERIES

OPERATING EXPENDITURES ---- MECHANICAL PLANTS

(CREDIT)

PROJECT	GRAND TOTAL	REGULAR STAFF	UNCLASS STAFF	INTER BRANCH TRANSFER	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	REPAIRS AND MAINT'CE	SLUDGE HAULAGE
EXTENDED AERATION/CONTACT STABILIZATION										
Region 1 - SOUTHWEST										
Dresden	145,004	79,761	459	(25,178)	55,042	12,417	4,309	1,189	311	9,298
Maidstone (Belle River)	174,953	83,674	10,830	(32,721)	61,783	12,711	(5,320)	1,570	39	16,718
Mildmay	39,781	19,102	3,367	(4,881)	17,588	2,870	721	505	473	-
Moore (Corunna)	87,610	40,613	10,262	(27,329)	23,546	4,800	586	657	625	13,155
Moore (Courtright)	48,113	13,904	-	11,509	25,413	2,583	781	-	-	2,575
Westminster TWP	66,468	21,361	30,876	(13,784)	38,453	3,731	954	451	2,232	4,436
Region 2 - WEST CENTRAL										
North Dumfries (Ayr)	34,176	-	7,899	7,017	14,916	2,234	2,520	-	151	-
Paris	57,857	20,870	4,810	258	25,938	3,543	2,845	506	1,387	7,093
Wellesley	29,643	-	9,260	3,556	12,816	2,143	823	240	1,180	1,715
Wilmot (Baden)	36,020	-	-	16	16	3	604	407	-	3,087
Region 3 - CENTRAL										
Alliston	125,924	59,751	1,609	(7,004)	54,356	7,653	2,670	615	2,625	20,706
Coldwater	42,796	31,239	5,600	(14,054)	22,785	1,668	1,812	347	1,566	1,814
Millbrook	46,674	21,632	1,832	(7,455)	16,009	2,907	1,593	384	391	4,410
Port McNicoll	45,736	-	14,958	7,542	22,500	2,697	1,765	275	1,831	2,298
Smith (Woodland Acres)	34,803	18,411	12,124	(9,339)	21,196	969	659	-	333	60
Region 4 - SOUTHEAST										
Bancroft	94,642	40,513	-	471	40,984	6,242	3,168	1,138	630	-
Barry's Bay	55,413	42,307	2,841	(22,057)	23,091	235	633	813	-	-
Chalk River	36,423	-	-	14,199	14,199	4,434	2,656	498	559	-
Cobden	25,569	-	-	4,675	4,675	1,479	1,702	151	60	-
Deseronto	56,280	56,603	2,499	(34,300)	24,802	3,254	1,767	650	90	-
Eganville	52,542	42,119	1,605	(18,271)	25,453	610	1,668	395	54	3,994
Ernestown (Odessa)	41,194	-	-	12,937	12,937	2,539	387	755	2,771	750
Frankford	60,761	45,811	425	(24,903)	21,333	328	1,441	759	185	1,260
Hagarty-Richards (Killaloe)	30,061	-	-	11,043	11,043	3,180	1,041	376	-	-
L'Original	33,134	-	-	12,510	12,510	3,953	468	682	-	-
Marmora	42,885	41,102	3,824	(24,082)	20,844	116	(723)	805	145	1,270
Merrickville	41,166	43,980	-	(20,750)	23,230	300	1,504	357	1,808	640
Pittsburg (Cana)	7,574	-	-	2,931	2,931	727	-	46	-	-
Region 5 - NORTHEAST										
Black River-Matheson (M)	57,123	21,238	16,160	(10,250)	27,148	2,331	1,939	424	1,761	1,500
Blind River	65,679	20,390	-	1,223	21,613	2,980	3,441	90	1,090	-
Haileybury	47,203	83,504	-	(57,810)	25,694	1,698	608	552	535	880
Iroquois Falls	83,313	38,619	3,208	-	41,827	6,059	2,052	1,003	2,558	7,875
Kirkland Lake	223,645	60,203	2,178	-	62,381	9,357	4,834	1,788	5,861	12,928
Latchford	26,826	19,896	-	(6,604)	13,292	1,710	856	206	955	406
Moosonee (North)	25,438	-	-	10,000	10,000	1,800	900	588	-	-
Moosonee (Old Townsite)	63,492	62,682	2,949	(39,487)	26,144	2,493	640	808	304	-
Smooth Rock Falls	53,533	21,330	6,131	-	27,461	3,288	1,918	540	36	2,838
Wicksteed (Hornpayne)	96,863	-	-	47,300	47,300	8,800	2,386	728	-	600
Region 6 - NORTHWEST										
Ear Falls	77,504	44,086	816	(14,815)	30,087	4,832	6,570	528	1,487	555
Geraldton	86,426	16,766	3,237	4,937	24,940	2,745	5,203	435	1,905	1,665
Ignace	89,149	17,421	20,926	-	38,347	3,208	2,904	817	1,361	-
Longlac	76,870	36,121	6,510	(18,396)	24,235	1,886	2,774	669	325	-
Pickle Lake	57,201	23,902	16,234	(18,953)	21,183	2,381	3,729	134	193	-
Red Lake	86,268	-	-	29,476	29,476	5,220	2,952	500	3,537	4,407
Schreiber	52,655	21,208	3,924	(139)	24,993	3,171	2,227	632	65	-
MODIFIED SECONDARY										
Region 4 - SOUTHEAST										
Hawkesbury	261,685	135,805	11,533	(45,987)	100,351	5,938	3,588	1,064	2,963	-

OPERATING EXPENDITURES ------- MECHANICAL PLANTS (CREDIT)

PROJECT	OTHER SERVICES	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TR'S CT'NS
EXTENDED AERATION/CONTACT STABILIZATION										
Region 1 - SOUTHWEST										
Dresden	1,417	12,215	3,638	11,641	22,612	20,090	57,981	-	-	3,040
Maidstone (Belle River)	10,305	28,632	14,910	16,021	30,524	15,692	77,147	-	-	-
Mildmay	274	1,252	1,147	2,088	9,153	4,313	16,701	78	-	571
Moore (Corunna)	(3,961)	10,476	8,029	15,863	19,957	2,789	46,638	244		1,320
Moore (Courtright)	3,201	5,776	-	-	7,927	5,542	13,469	-	-	91
Westminster TWP	482	7,601	3,765	1,043	7,891	3,030	15,729	-	-	-
Region 2 - WEST CENTRAL										
North Dumfries (Ayr)	2,328	2,479	2,657	-	9,047	(680)	11,024	-	-	1,003
Paris	-	8,986	921	2,266	11,103	2,255	16,545	-	-	-
Wellesley	629	3,764	6	2,167	4,748	1,914	8,835	-	-	1,262
Wilmot (Baden)	18,459	21,953	510	3,489	6,841	1,547	12,387	-	-	1,057
Region 3 - CENTRAL										
Alliston	(1,257)	22,689	17,973	2,115	13,835	4,633	38,556	-	-	-
Coldwater	1,277	5,004	394	339	6,030	4,764	11,527	-	-	-
Millbrook	821	6,006	3,432	4,071	5,284	6,705	19,492	103		565
Port McNicoll	800	5,204	1,595	1,845	5,008	4,520	12,968	-	-	602
Smith (Woodland Acres)	779	1,172	988	24	6,824	2,971	10,807	-	-	-
Region 4 - SOUTHEAST										
Bancroft	1,676	3,444	9,774	443	14,360	14,158	38,735	-	-	2,069
Barry's Bay	1,007	1,820	595	715	7,728	19,826	28,864	413	-	357
Chalk River	899	1,956	616	475	5,780	5,975	12,846	-	-	332
Cobden	3,349	3,660	379	-	4,934	8,672	13,985	-	-	168
Deseronto	4,954	5,694	339	851	7,460	5,718	14,368	-	-	6,395
Eganville	1,375	5,818	121	757	5,534	11,929	18,341	-	-	651
Ernestown (Odessa)	(556)	3,720	2,323	1,510	6,466	11,312	21,611	-	-	-
Frankford	4,878	7,082	6,194	3,473	11,798	7,776	29,241	-	-	1,336
Hagarty-Richards (Killaloe)	394	770	439	2,394	6,014	5,180	14,027	-	-	-
L'Original	2,441	3,123	184	306	8,152	4,325	12,967	-	-	113
Marmora	103	2,323	5,155	1,344	7,645	5,998	20,142	-	-	183
Merrickville	266	3,071	291	2,071	7,051	2,582	11,995	-	-	1,066
Pittsburg (Cana)	187	233	3	-	2,133	1,547	3,683	-	-	-
Region 5 - NORTHEAST										
Black River-Matheson (M)	194	3,879	1,797	1,342	14,477	4,210	21,826	-	-	-
Blind River	316	1,496	4,144	673	19,692	7,643	32,152	-	-	3,997
Haileybury	258	2,225	-	1,331	11,200	3,066	15,597	-	-	1,381
Iroquois Falls	341	11,777	655	1,659	14,779	3,263	20,356	-	-	1,242
Kirkland Lake	17,208	37,785	4,086	3,176	53,516	14,423	75,201	-	-	34,087
Latchford	25	1,592	155	-	10,549	(3,158)	7,546	-	-	1,830
Moosonee (North)	6	594	661	2,349	5,828	3,306	12,144	-	-	-
Moosonee (Old Townsite)	3,191	4,303	4,204	1,127	10,909	8,737	24,977	-	-	4,935
Smooth Rock Falls	525	3,939	361	1,158	12,877	1,895	16,291	-	-	636
Wicksteed (Hornepayne)	8,970	10,298	3,173	1,805	18,055	5,046	28,079	-	-	-
Region 6 - NORTHWEST										
Ear Falls	1,295	3,865	852	1,333	19,324	10,641	32,150	-	-	-
Geraldton	7,038	11,043	8,565	-	12,289	19,157	40,011	-	-	2,484
Ignace	594	2,772	5,945	12,074	12,983	10,916	41,918	-	-	-
Longlac	6,626	7,620	3,819	491	15,249	20,430	39,989	-	-	366
Pickle Lake	9,223	9,357	550	859	2,776	16,366	20,551	-	-	-
Red Lake	6,070	14,514	5,960	4,360	16,430	7,356	34,106	-	-	-
Schreiber	1,364	2,061	3,470	1,245	9,695	4,339	18,749	-	-	1,454
MODIFIED SECONDARY										
Region 4 - Southeast										
Hawkesbury	2,258	6,285	3,682	16,930	82,977	36,025	139,614	-	-	5,909

OPERATING EXPENDITURES ---- MECHANICAL PLANTS

(CREDIT)

PROJECT	GRAND TOTAL	REGULAR STAFF	UNCLASS STAFF	INTER BRANCH TRANSFER	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	REPAIRS AND MAINT'CE	SLUDGE HAULAGE
HIGH RATE ACTIVATED SLUDGE										
Region 1 - SOUTHWEST										
Mt.sford	99,375	62,255	3,020	(23,779	41,496	9,390	3,989	1,038	1,602	2,714
Region 2 - WEST CENTRAL										
Cambridge (Hespeler)	150,884	40,762	3,274	6,242	50,278	8,238	2,735	766	-	16,262
Region 3 - CENTRAL										
Bradford	158,500	53,646	-	(2,367)	51,279	7,377	3,481	715	4,781	17,748
Region 4 - SOUTHEAST										
Carleton Place	89,473	40,171	2,332	(11,584)	30,919	2,854	(1,039)	842	1,984	810
OXIDATION DITCH										
Region 1 - SOUTHWEST										
Paisley	40,939	21,386	2,075	(410)	23,051	3,119	2,669	319	36	-
Southampton	83,334	67,353	11,511	(44,298)	34,566	9,914	4,807	721	198	594
Region 2 - WEST CENTRAL										
Grand Valley	44,177	-	-	14,575	14,575	4,495	1,922	242	-	5,880
Haldimand (Cayuga)	31,674	-	-	11,852	11,852	3,674	2,262	214	116	2,047
Woolwich (St. Jacobs)	46,093	-	4,077	7,330	11,407	3,215	860	435	124	5,629
Region 3 - CENTRAL										
Fenelon Falls	76,070	18,806	-	11,138	29,944	6,641	950	474	1,730	6,848
Hastings	97,355	21,004	-	22,302	43,306	10,252	2,287	566	11,069	7,203
Norwood	59,642	20,943	-	8,542	29,485	5,712	2,179	60	2,024	1,908
TERTIARY TREATMENT										
Region 1 - SOUTHWEST										
Petrolia	144,559	34,999	-	24,193	59,192	6,328	3,372	124	1,585	2,079
Stratford	333,093	136,207	4,409	111	140,727	27,564	4,300	2,471	1,155	33,061
Region 2 - WEST CENTRAL										
Orangeville	191,935	77,280	2,563	(18,349)	62,034	8,028	1,840	843	4,296	17,172
Simcoe	278,173	103,410	7,640	(11,592)	99,458	12,939	1,350	-	153	14,890

OPERATING EXPENDITURES ------- MECHANICAL PLANTS

(CREDIT)

PROJECT	OTHER SERVICES	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TR'S'CT'NS
HIGH RATE ACTIVATED SLUDGE										
Region 1 - SOUTHWEST										
Meaford	(2,395)	2,959	2,439	1,101	29,311	7,151	40,002			1,539
Region 2 - WEST CENTRAL										
Cambridge (Hespeler)	1,397	18,425	2,561	12,222	42,658	3,673	61,114			10,094
Region 3 - CENTRAL										
Bradford	3,595	26,839	4,652	19,984	35,816	9,072	69,524			
Region 4 - SOUTHEAST										
Carleton Place	1,533	5,169	14,431	7,390	27,167	2,582	51,570			
OXIDATION DITCH										
Region 1 - SOUTHWEST										
Paisley	592	947	1,974	184	5,164	3,729	11,051			102
Southampton	(884)	629	3,459	1,238	14,150	13,796	32,643			775
REGION 2 - WEST CENTRAL										
Grand Valley	3,286	9,408	1,457	30	4,338	6,999	12,824	310		643
Haldimand (Cayuga)	364	2,741	677	2,250	5,632	1,805	10,364			781
Woolwich (St. Jacobs)	1,691	7,879	1,225	9,952	6,128	5,427	22,732			
Region 3 - CENTRAL										
Fenelon Falls	2,550	11,602	3,992	3,540	9,119	9,397	26,048	90		795
Hastings	869	19,707	2,008	4,700	7,464	8,131	22,303			
Norwood	250	4,242	2,872	1,753	6,413	6,349	17,387			637
TERTIARY TREATMENT										
Region 1 - SOUTHWEST										
Petrolia	14,363	18,151	9,751	4,445	28,807	12,610	55,613	-	-	1,903
Stratford	1,793	38,480	2,404	42,390	50,105	13,218	108,117	42	-	13,863
Region 2 - WEST CENTRAL										
Orangeville	2,399	24,710	6,947	30,606	28,910					
Simcoe	9,232	24,275	5,384	38,556	73,866	22,345	140,151	-	-	8,681

OPERATING EXPENDITURES --------LAGOONS

(CREDIT)

PROJECT	GRAND TOTAL	REGULAR STAFF	UNCLASS STAFF	INTER BRANCH TRANSFER	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	REPAIRS AND MAINT'CE	SLUDGE HAULAGE
WASTE STABILIZATION PONDS										
CONVENTIONAL LAGOON CONTINUOUS										
Region 1 - SOUTHWEST										
Chesley	4,009			413	413		59	98		
Wiarton	14,600		4,654	1,693	6,347		62	111		
Wingham	4,210			218	218		343	115		
Region 2 - WEST CENTRAL										
Shelburne	8,861			3,072	3,072	1,003	719	796		
Region 5 - NORTHEAST										
Black R. Matheson (Ramore)	3,380			1,870	1,870	340	357	14		
Englehart	8,663		4,461		4,461	149	140	78	599	
Little Current	1,365							53		
Michipicoten (Wawa)	577						43	45		
New Liskeard	711							378		
Powassan	1,558			70	70	23	39	30		
CONVENTIONAL LAGOON SEASONAL										
Region 1 - SOUTHWEST										
Aylmer	67,974		84	19,968	20,052		3,394	166	1,834	
Belmont	10,780			6,853	6,853		1,039	102		
Dundalk	20,010		4,302	873	5,175	143	405	62		
Dutton	12,607		6,676	212	6,888	233	236	46		
East Zorra-Tavistock	13,919			1,025	1,025		581	88		807
Enniskillen (Oil City)	15,883		15,300	(4,196)	11,104	500		23	972	
Forest	10,466		5,135	298	5,433	173	143	50		
Glencoe	11,117		3,403	1,327	4,730	104	386	135		
Gosfield N. (Cottam)	8,898			4,406	4,406		350	68		
Harrow	25,063			6,193	6,193		740	289		
Hensall	11,276			1,309	1,309		302	58	4,303	
Lucan	10,518			608	608		205	59		
Markdale	4,054			948	948		402			
Milverton	17,817		5,538	883	6,421	173	306	37	530	
Mitchell	19,796		4,932		4,932		119	79		
Moore (Brigden)	6,608			4,910	4,910	500	300	41		
Normanby (Neustadt)	9,794			5,711	5,711		2,665	105		
Norwich	30,007		4,983	4,809	9,792	169	854	136		
Oil Springs	6,781			4,803	4,803			54	603	
Port Stanley	40,325			17,123	17,123		2,594	696		
Raleigh & Tilbury E (Merlin)	11,755		7,179	293	7,472	298		96		
Ridgetown	21,895			1,003	1,003	32	690	125	7,167	
Rodney	16,549		5,840	1,020	6,860	208	1,056	32		
Sarnia (Bright's Grove)	26,977			12,588	12,588	1,600	612	119	2,740	
Seaforth	50,989		8,021	2.893	10,914	297	1,040	158	197	
Sombra (Port Lambton + Sombra)	19,355			10,262	10,262	500	800	276		
Tilbury North (Stoney Point)	10,322			4,098	4,098		1,963			
Tilbury West (Comber)	13,463			6,604	6,604		1,417	87		
Watford	10,763		5,382	81	5,463	183	37	76		
West Lorne	11,258		6,850	110	6,960	238	194	34		
Zurich	5,172			663	663	(3)	231	44		

OPERATING EXPENDITURES --------LAGOONS

(CREDIT)

PROJECT	OTHER SERVICES	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TR'S'CT'NS
WASTE STABILIZATION PONDS										
CONVENTIONAL LAGOON CONTINUOUS										
Region 1 -SOUTHWEST										
Chesley	1,877	1,975	-	-	1,342	220	1,562	-	-	-
Wiarton	416	527	167	296	5,838	990	7,291	-	-	373
Wingham	221	336	136	-	2,074	1,023	3,233	-	-	80
Region 2 - WEST CENTRAL										
Shelburne	20	816	-	-	2,803	448	3,251	-	-	-
Region 5 - NORTHEAST										
Black R. Matheson (Ramore)	-	14	-	-	716	83	799	-	-	-
Englehart	80	757	1,457	-	1,204	465	3,126	30	-	-
Little Current	-	53	-	-	1,247	65	1,312	-	-	-
Michipicoten (Wawa)	188	233	-	-	-	301	301	-	-	-
New Liskeard	-	378	-	-	281	52	333	-	-	-
Powassan	-	30	-	-	1,288	108	1,396	-	-	-
CONVENTIONAL LAGOON SEASONAL										
Region 1 - SOUTHWEST										
Aylmer	2,168	4,168	786	13,689	10,892	13,605	38,972	-	-	1,388
Belmont	581	683	-	7,335	1,290	(6,645)	1,980	-	-	225
Dundalk	10,867	10,929	-	-	36	3,322	3,358	-	-	-
Dutton	184	230	-	-	1,302	3,718	5,020	-	-	-
East Zorra (Tavistock)	297	1,192	183	154	273	10,511	11,121	-	-	-
Enniskillen (Oil City)	-	995	-	-	312	2,922	3,234	-	-	50
Forest	2,375	2,425	916	-	823	549	2,288	-	-	4
Glencoe	790	925	516	-	1,157	2,630	4,303	471	-	198
Gosfield N. (Cotttam)	2,264	2,332	-	-	657	932	1,589	-	-	221
Harrow	2,248	2,537	1,459	-	2,271	9,835	13,565	-	-	2,028
Hensall	454	4,815	-	-	2,249	1,817	4,066	-	-	784
Lucan	4,653	4,712	-	-	936	4,057	4,993	-	-	-
Markdale	184	184	-	-	-	2,520	2,520	-	-	-
Milverton	3,745	4,312	-	1,906	-	3,976	5,882	-	-	723
Mitchell	-	79	561	8,879	4,455	364	14,239	-	-	427
Moore (Brigden)	516	557	-	-	126	90	216	30	-	95
Normanby (Neustadt)	15	120	-	-	373	618	991	-	-	307
Norwich	14,219	14,355	879	-	2,325	921	4,125	-	-	712
Oil Springs	36	693	133	-	639	365	1,137	-	-	148
Port Stanley	4,478	5,174	820	-	7,293	4,315	12,428	93	-	2,913
Raleigh & Tilbury E (Merlin)	80	176	2,358	-	778	500	3,636	-	-	173
Ridgetown	997	8,289	331	-	2,314	8,129	10,774	-	-	1,107
Rodney	198	230	1,985	-	1,510	4,052	7,547	-	-	648
Sarnia (Brights Grove)	2,679	5,538	503	-	5,131	430	6,064	-	-	575
Seaforth	10,103	10,458	13,728	110	3,630	10,151	27,619	279	-	382
Sombra (Port Lambton + Sombra)	1,592	1,868	-	-	5,275	289	5,564	33	-	328
Tilbury North (Stoney Point)	1,000	1,000	25	-	2,645	333	3,003	-	-	258
Tilbury West (Comber)	59	146	1,655	-	874	2,639	5,168	-	-	128
Watford	2,277	2,353	453	-	1,425	220	2,098	-	-	629
West Lorne	251	285	113	-	622	2,450	3,185	-	-	396
Zurich	2,429	2,473	-	-	846	843	1,689	-	-	119

OPERATING EXPENDITURES -------LAGOONS

(CREDIT)

PROJECT	OTHER SERVICES	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TR'S'CT'NS
CONVENTIONAL LAGOON SEASONAL										
Region 2 - WEST CENTRAL										
Arthur	66	250	915	3,959	1,629	288	6,791	-	-	40
Harriston	50	162	626	-	2,386	75	3,087	-	-	447
Nanticoke (Jarvis)	1,630	1,655	21	3,603	768	716	5,108	-	-	-
Norfolk (Port Rowan)	975	2,731	21	-	425	193	639	-	-	1,166
Wilmot (New Hamburg)	95	202	88	3,339	3,405	1,239	8,071	-	-	1,458
Region 3 - CENTRAL										
Beeton	796	1,301	748	-	2,492	790	4,030	-	-	101
Havelock	150	300	342	-	2,199	372	2,868	-	-	90
Region 4 - SOUTHEAST										
Casselman	2,062	2,716	2,494	-	1,731	2,716	6,941	-	-	-
Chesterville	(131)	(74)	852	-	1,709	6,160	8,721	-	-	-
Ernestown (Amherstview)	3,145	3,271	-	-	6,753	1,733	8,486	-	-	-
Goulbourn (Richmond)	2,798	2,921	-	1,303	1,150	6,515	9,048	-	-	668
Lancaster	948	1,111	108	-	1,432	4,205	5,745	-	-	747
Madoc	-	-	337	1,966	169	1,152	3,624	-	-	17
Plantagenet	3,581	7,340	644	-	2,155	3,930	6,729	-	-	-
Rockland	285	359	-	509	-	2,359	2,868	-	-	357
Russell	3,955	4,155	-	-	1,503	3,113	4,616	-	-	149
St. Isidore de Prescott	1,263	1,452	576	-	1,307	3,652	5,535	-	-	514
Stirling	-	142	-	-	2,507	408	2,915	-	-	52
Tweed	225	225	-	-	3,540	2,838	6,378	-	-	-
Vankleek Hill	1,376	2,161	1,111	-	4,255	1,531	6,897	-	-	1,237
Westport	1,437	2,246	-	3,428	1,443	(259)	4,612	-	-	96
Winchester	1,624	1,942	4,713	-	1,296	6,908	12,917	-	-	46
Region 5 - NORTHEAST										
Assiginack (Manitowaning)	199	380	287	23	1,273	4,557	6,140	-	-	149
Black R. Matheson (V.G.)	5	14	-	-	-	55	55	-	-	-
Bruce Mines	906	2,801	821	44	2,589	1,599	5,053	-	-	118
Burks Falls	531	3,304	285	-	3,115	2,562	5,962	279	-	39
Caldwell (Verner)	4,219	5,444	-	-	2,894	494	3,388	-	-	496
Casimir, J.A. (St. Charles)	-	-	563	-	596	238	1,397	-	-	-
Fauquier (Moonbeam)	-	25	150	-	495	274	919	-	-	-
Gore Bay	-	242	299	-	1,765	1,057	3,121	-	-	-
Haileybury (N. Cobalt)	4,240	4,526	271	-	1,916	445	2,632	-	-	204
Hearst	735	2,807	6,445	-	10,652	1,012	18,109	-	-	4,145
North Himsworth (Callander)	-	153	-	-	3,052	2,698	5,750	-	-	240
Owens, W.I. (Val Rita)	-	-	-	-	166	175	341	-	-	-
Ratter Dunnet Warren	1,408	1,545	-	-	2,174	295	2,469	-	-	81
Shackleton & Machin (Fauq.)	15	65	161	-	1,774	1,228	3,163	-	-	10
Webbwood	1,127	1,302	-	-	800	1,161	1,961	-	-	104
Temagami	3,242	6,227	(416)	207	2,776	(201)	2,356	-	-	-
Region 6 - NORTHWEST										
Atwood (Rainy River)	1,753	8,306	211	-	1,507	3,202	4,920	-	-	935
Emo	6,945	7,019	9	-	3,606	(1,616)	1,999	-	-	-

OPERATING EXPENDITURES -------LAGOONS

(CREDIT)

PROJECT	GRAND TOTAL	REGULAR STAFF	UNCLASS STAFF	INTER BRANCH TRANSFER	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	REPAIRS AND MAINT'CE	SLUDGE HAULAGE
CONVENTIONAL LAGOON SEASONAL										
Region 2 - WEST CENTRAL										
Arthur	15,365	-	6,403	916	7,319	492	473	169	15	-
Harriston	4,782	-	-	673	673	210	203	112	-	-
Nanticoke (Jarvis)	12,252	-	-	3,671	3,671	1,077	741	25	-	-
Norfolk (Port Rowan)	12,282	-	6,393	761	7,154	461	131	39	-	1,717
Wilmot (New Hamburg)	10,605	-	-	181	181	33	660	81	26	-
Region 3 - CENTRAL										
Beeton	11,650	-	-	4,187	4,187	1,008	1,023	137	368	-
Havelock	18,508	-	10,597	2,818	13,415	1,305	530	150	-	-
Region 4 - SOUTHEAST										
Casselman	16,813	-	-	5,534	5,534	1,391	231	654	-	-
Chesterville	19,907	41,782	1,908	(31,724)	11,966	(2,819)	2,113	57	-	-
Ernestown (Amherstview)	27,067	-	-	11,911	11,911	2,464	935	126	-	-
Goulbourn (Richmond)	25,770	-	-	7,780	7,780	2,240	3,113	123	-	-
Lancaster	14,640	-	-	5,390	5,390	1,756	(109)	163	-	-
Madoc	6,068	-	-	1,452	1,452	430	545	-	-	-
Plantagenet	27,120	-	-	8,950	8,950	2,290	1,811	174	3,585	-
Rockland	9,387	-	-	4,290	4,290	1,150	363	74	-	-
Russell	22,835	-	-	8,596	8,596	2,073	3,246	199	1	-
St. Isidore de Prescott	14,396	-	-	5,140	5,140	1,375	380	189	-	-
Stirling	3,406	-	-	197	197	83	17	142	-	-
Tweed	10,594	-	-	1,873	1,873	734	1,384	-	-	-
Vankleek Hill	24,643	-	-	9,814	9,814	3,028	1,506	343	442	-
West Port	15,724	23,809	161	(14,555)	9,415	(1,062)	417	674	90	45
Winchester	30,206	-	-	11,313	11,313	3,262	726	318	-	-
Region 5 - NORTHEAST										
Assiginack (Manitowaning)	13,393	-	10,498	(4,435)	6,063	248	413	139	42	-
Black R. Matheson (V.G.)	626	-	-	430	430	77	50	9	-	-
Bruce Mines	24,016	18,531	159	(5,950)	12,740	2,954	350	349	1,546	-
Burks Falls	18,233	-	7,142	707	7,849	490	310	177	2,596	-
Caldwell (Verner)	22,888	24,620	2,374	(16,515)	10,479	3,081	-	219	1,006	-
Casimir, J.A. (St. Charles)	4,674	-	2,943	-	2,943	102	232	-	-	-
Fauquier (Moonbeam)	4,144	-	-	2,500	2,500	400	300	25	-	-
Gore Bay	6,957	-	2,929	335	3,264	101	229	242	-	-
Haileybury (N. Cobalt)	12,239	-	-	3,897	3,897	844	136	88	198	-
Hearst	39,017	-	216	11,880	12,096	1,474	386	266	1,806	-
North Himsworth (Callander)	12,507	-	-	5,978	5,978	203	183	153	-	-
Owens, W.I. (Val Rita)	5,027	-	4,534	-	4,534	152	-	-	-	-
Ratter Dunnet Warren	7,035	-	-	2,479	2,479	461	-	137	-	-
Shackleton & Machin (Fauq.)	12,438	-	-	7,400	7,400	1,200	600	50	-	-
Webbwood	8,843	-	5,065	-	5,065	172	239	73	102	-
Temagami	19,460	-	9,345	543	9,888	493	496	-	2,985	-
Region 6 - NORTHWEST										
Atwood (Rainy River)	18,122	3,139	-	(300)	2,839	216	906	61	6,492	-
Emo	15,134	-	-	6,101	6,101	-	15	74	-	-

OPERATING EXPENDITURES -------LAGOONS

(CREDIT)

PROJECT	GRAND TOTAL	REGULAR STAFF	UNCLASS STAFF	INTER BRANCH TRANSFER	TOTAL SALARIES AND WAGES	TOTAL EMPLOYEE BENEFITS	TOTAL TRANSPORT AND COMMUN.	INSURANCE	REPAIRS AND MAINT'CE	SLUDGE HAULAGE
CONVENTIONAL LAGOON ANNUAL										
Region 1 - SOUTHWEST										
Dover (Mitchell's Bay	4,185	-	-	1,007	1,007	-	68	53	-	-
Essex N.E. & S.W.	45,709	-	10,648	6,734	17,382	369	1,334	177	100	-
Region 2 - WEST CENTRAL										
Dunnville (Oswego Park)	2,533	-	-	515	515	109	475	-	-	-
Region 4 - NORTHEAST										
Alfred	15,609	-	-	6,802	6,802	1,926	1,216	63	446	-
Region 5 - NORTHEAST										
Cosby, M. M. (Noelville)	5,629	-	3,262	-	3,262	80	256	-	-	-
Sundridge	13,198	-	5,357	582	5,939	219	599	126	-	-
Thessalon	21,773	-	16,261	(5,386)	10,875	(494)	1,290	-	803	-
LAGOON AND SPRAY										
Region 3 - CENTRAL										
Omemee	22,042	(365)	12,753	2,034	14,422	726	511	179	758	-
Region 4 - SOUTHEAST										
Leeds & Lansdowne	17,940	-	-	8,566	8,566	2,055	528	280	90	-
AERATED CELL PLUS LAGOON										
Region 1 - SOUTHWEST										
Durham	25,520	-	-	340	340	-	124	120	-	-
Kincardine	39,706	20,521	-	64	20,585	2,990	2,234	1,044	145	-
Listowel	70,964	21,190	210	136	21,536	3,185	3,373	250	83	-
Thornbury	64,668	-	-	23,778	23,778	-	1,760	241	2,826	-
Region 2 - WEST CENTRAL										
Nanticoke (Waterford)	32,385	-	-	6,291	6,291	2,067	2,579	476	125	-
Region 4 - SOUTHEAST										
Alexandria	27,770	-	-	8,157	8,157	2,324	973	201	450	-
Almonte	38,936	-	-	11,855	11,855	3,353	2,776	315	1,348	-
EXFILTRATION LAGOON										
Region 5 - NORTHEAST										
Mattawa	4,232	-	-	-	-	-	-	126	1,129	-

OPERATING EXPENDITURES --------LAGOONS

(CREDIT)

PROJECT	OTHER SERVICES	TOTAL SERVICES	MACHINERY AND EQUIPMENT	CHEMICALS	UTILITIES	OTHER SUPPLIES AND EQUIPMENT	TOTAL SUPPLIES AND EQUIPMENT	TOTAL ACQ/CON OF PHYS ASSETS	TOTAL TRANSFER PAYMENTS	OTHER TR'S'CT'NS
CONVENTIONAL LAGOON ANNUAL										
Region 1 - SOUTHWEST										
Dover (Mitchell's Bay)	1,602	1,655	-	-	788	220	1,008	-	-	447
Essex N.E.	3,069	3,346	406	-	2,987	17,878	21,271	146	-	1,861
Essex S.W.										
Region 2 - WEST CENTRAL										
Dunnville (Oswego Park)	805	805	-	-	447	182	629	-	-	-
Region 4 - SOUTHEAST										
Alfred	490	999	-	-	614	3,850	4,464	-	-	202
Region 5 - NORTHEAST										
Cosby, M. M. (Noelville	-	-	73	-	1,417	541	2,031	-	-	-
Sundridge	2,377	2,503	13	-	2,382	1,536	3,931	-	-	7
Thessalon	177	980	2,404	-	5,249	1,469	9,122	-	-	-
LAGOON AND SPRAY										
Region 3 - CENTRAL										
Omemee	365	1,302	936	-	2,719	1,396	5,051	-	-	30
Region 4 - SOUTHEAST										
Leeds & Lansdowne	697	1,067	512	-	2,399	(620)	2,291	3,307	-	126
AERATED CELL PLUS LAGOON										
Region 1 - SOUTHWEST										
Durham	6,099	6,219	31	-	7,558	11,219	18,808	-	-	29
Kincardine	(4,525)	(3,336)	22	422	14,822	1,943	17,209	-	-	24
Listowel	2,111	2,444	1,663	12,234	21,576	3,336	38,809	-	-	1,617
Thornbury	5,468	8,535	2,455	-	15,919	2,263	20,637	-	-	9,958
Region 2 - WEST CENTRAL										
Nanticoke (Waterford)	822	1,423	3,018	5,864	9,569	1,326	19,777	-	-	248
Region 4 - SOUTHEAST										
Alexandria	788	1,439	-	-	12,264	2,613	14,877	-	-	-
Almonte	2,326	3,989	81	-	7,473	7,956	15,510	1,453	-	-
EXFILTRATION LAGOON										
Region 5 - NORTHEAST										
Mattawa	-	1,255	(1,071)	-	3,920	99	2,948	-	-	29

PROJECT REPORTS

The projects are divided into two major sections - "mechanical wastewater treatment plants", and "waste stabilization ponds". The latter refers to all lagoon type systems and they appear at the end of this "Operating Summary".

MECHANCIAL SEWAGE TREATMENT PLANTS

The reports for each plant contain three sections, which are, the design details, the loading graphs and a performance report.

The design details are given in metric and in imperial units. For easier comprehension of the plant processes, a flow schematic is provided.

The yearly average concentrations for influent and effluent values for BOD, SS, and total phosphorus are plotted on the graphs. A graph is also utilized to demonstrate the relationship between the average daily flow and design capacity over the years.

Finally, the plant performance report is included. Shown in this report, are the monthly flow values for the plant. Also, the monthly influent and effluent concentrations for BOD, SS, and total phosphorus are given. The reductions for these parameters are shown as a percentage and in thousands (1000) of kilograms. Displayed at the bottom of this report are yearly totals, averages, maximums and number of samples.

WASTE STABILIZATION PONDS (LAGOONS)

Design details and a simple drawing are provided for the waste stabilization ponds.

A project performance report is included which shows monthly influent and effluent values for flow, BOD, SS and total phosphorus. The reductions for these parameters are shown as a percentage and in thousands (1000) of kilograms. Also provided, are the yearly totals, averages, maximums and the number of samples.

MECHANICAL WASTEWATER TREATMENT PLANTS

PRIMARY TREATMENT PLANTS

Ministry of the Environment
Ontario

Southwestern Region
①

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Ministry of the Environment
Ontario

Southwestern Region

①

DESIGN DATA - METRIC

PROJECT City of Owen Sound WPCP

PROJECT NO. 2-0069-60

TREATMENT Primary

DESIGN FLOW 24.55 $10^3 m^3/d$

DESIGN POPULATION 25,000

BOD - Raw Sewage 180 mg/l
Removal 40%

SS - Raw Sewage 200 mg/l
- Removal 65%

SEWAGE PUMPING STATION

Screening

- 44.45mm spacing

Pumps

Type: Worthington
Size: Three 238.45 l/s at 10.06m
(One diesel standby)

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C 914mm

Grit Removal

Type: Aerated
Size: One 5.6m x 4.0m x 3.7m
Volume: 81.83m^3
Retention: 8.6 min

Pre-aeration Tank

Size: One 7.2m x 4.0m x 3.7m
Volume: 106.37 m^3
Retention: 11.2 min.

Air Supply

Type: Sutorbilt
Size: Two 170 l/s at 41 kPa

Primary Sedimentation

Type: Rex Linkbelt
Size: Two 23.8m x 9.8m x 3.81m
Volume: 1763.84 m^3

OWEN SOUND

Retention: 3.11 hr.
Loading: Surface, 29.33 $m^3/m^2 \cdot d$
Weir, 403.81 $m^3/m \cdot d$

CHLORINATION

Type: W & T
Size: One 907.2 kg/d

Chlorine Contact Chamber

Size: One 9.4m x 4.3m x 2.4m
Volume: 986.48m^3
Retention: 11.2 min

OUTFALL

- 252m to Owen Sound

SLUDGE HANDLING

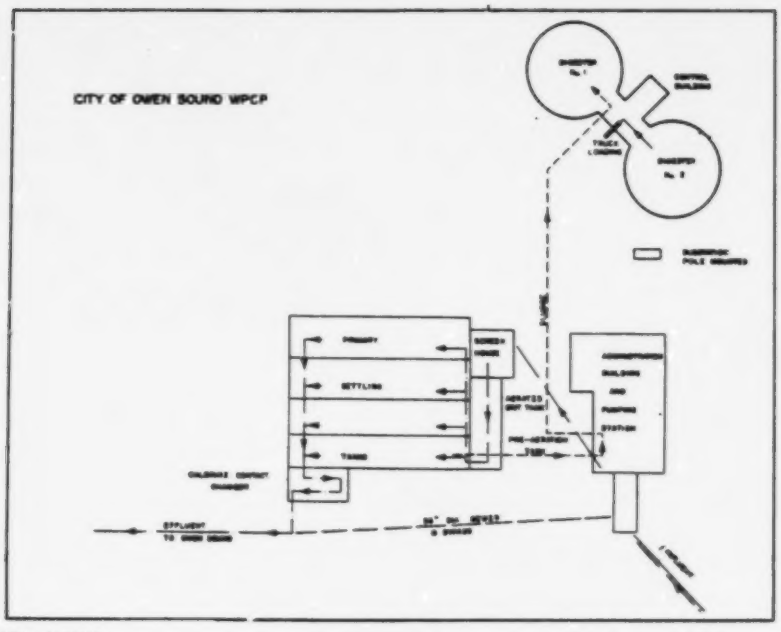
Digestion System - Two-stage

Primary --
Type: PFT with one Sutorbilt compressor
Size: One 12.2m dia x 7.62m swd
Volume: 0.891 $10^3 m^3$
Loading: 28.05 $kg/m^3 \cdot mon$

Secondary --
Size: One 12.2m dia x 7.47m swd
Volume: 872.26m^3
Total Loading: 19.18 $kg/m^3 \cdot d$

WEST SIDE PUMPING STATION

One - 296.44 l/s Chicago Pump
Two - 78.70 l/s Smart-Turner
Standby - Diesel generator



DESIGN DATA - IMPERIAL

PROJECT City of Owen Sound WPCP

PROJECT NO. 2-0069-60

TREATMENT Primary

DESIGN FLOW 5.4 mgd

DESIGN POPULATION 25,000

BOD - Raw Sewage 180 mg/l
- Removal 40%

SS - Raw Sewage 200 mg/l
- Removal 65%

SEWAGE PUMPING STATION

Screening

- 1 3/4" spacing

Pumps

Type: Worthington
Size: Three 3150 gpm @ 33'tdh
(One diesel standby)

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C (36")

Grit Removal

Type: Aerated
Size: One 18½x13x12'(18,000 gal)
Retention: 8.6 min

Pre-aeration Tank

Size: One 23'9"x13x12'
(23,400 gal)
Retention: 11.2 min

Air Supply

Type: Sutorbilt
Size: Two 408 scfm @ 6 psi

Primary Sedimentation

Type: Rex Linkbelt
Size: Two 78x32x12½'
(388,000 gal)

Retention: 3.11 hr
Loading:
Surface, 600 gal/ft^2/day
Weir, 8,260 gal/ft/day

CHLORINATION

Type: W & T
Size: One 2000 lb/day

Chlorine Contact Chamber

Size: One 31x14x8'(21,700 gal)
Retention: 11.2 min

OUTFALL - 828' to Owen Sound

SLUDGE HANDLING

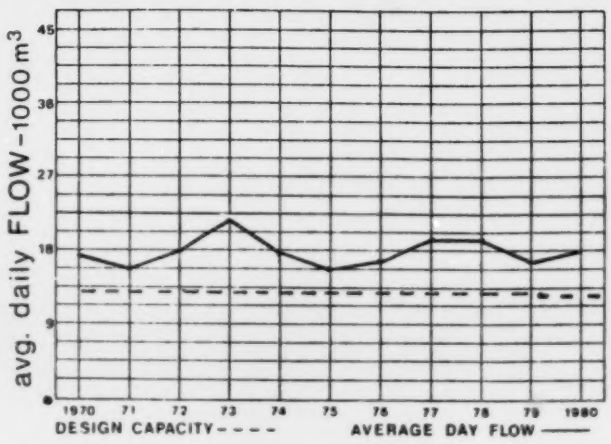
Digestion System - Two-stage

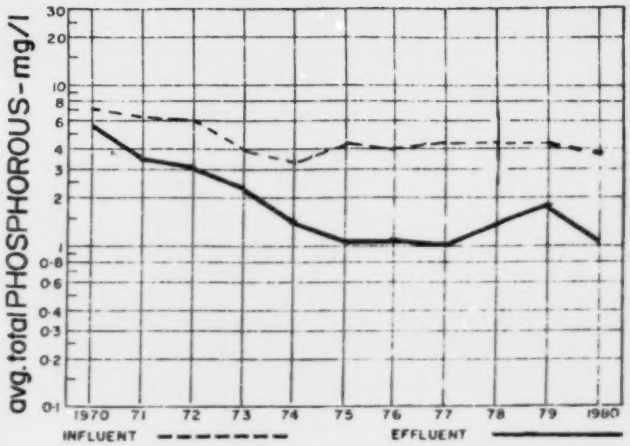
Primary --
Type: PFT with one Sutorbilt compressor
Size: One 40' diax25' swd
(31,400 cu ft or 0.196 mil gal)
Loading: 2.75 lb/cu ft/mo

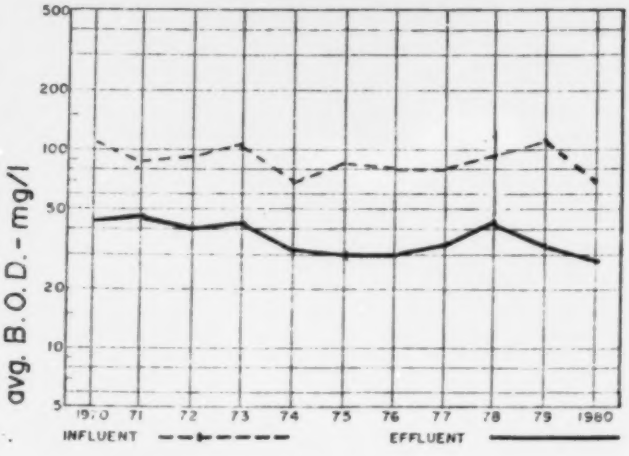
Secondary --
Size: One 40'diax24½' swd
(30,800 cu ft or 0.192 mil gal)
Total Loading:
1.88 lb/cu ft/mo

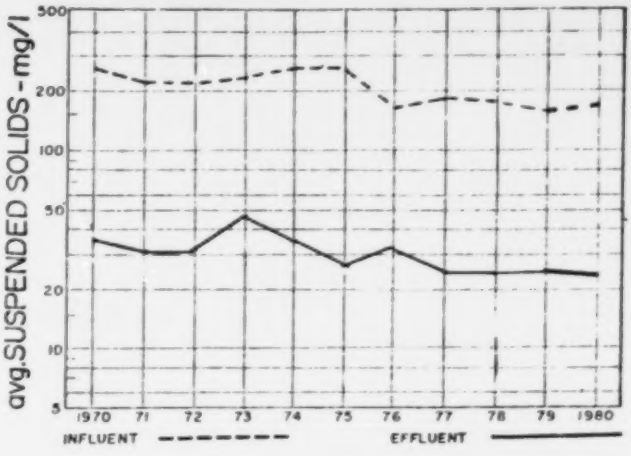
WEST SIDE PUMPING STATION

One - 3916 gpm Chicago Pump
Two - 1000 gpm Smart-Turner
Standby - Diesel generator









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000551 OWEN SOUND MPCP

MUNICIPALITY : OWEN SOUND
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 19,697
POPULATION SERVED : 19,180
PERCENT SERVED : 97.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 13.638 1000 M3 DESIGN BOD5 : 180.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	669.600	21.600	40.900		32.0	24.0	25	5.3	183.6	33.3	81	100.6	2.3	1.9	17	.268
FEB	500.700	17.300	29.000		65.0	29.5	54	17.7	162.7	22.6	86	70.1	5.3	1.3	75	2.003
MAR	584.400	18.800	43.800		145.0	45.0	68	58.4	204.7	32.9	83	100.4	5.3	.7	86	2.688
APR	584.700	19.400	61.800		58.0	33.5	42	14.3	157.7	26.2	83	76.8	3.6	1.4	61	1.286
MAY	439.200	14.100	23.700		122.0	65.0	46	25.0	179.6	32.3	82	64.6	4.5	1.4	68	1.362
JUN	487.100	16.200	30.200		78.0	20.6	73	27.9	168.9	21.0	87	72.0	4.8	1.3	71	1.676
JUL	637.200	20.360	43.000		34.0	15.5	54	11.7	151.2	22.2	85	82.1	2.8	1.3	53	.956
AUG	575.300	18.500	38.300		52.0	19.0	63	18.9	192.0	20.6	89	98.6	3.4	.6	82	1.611
SEP	515.800	17.190	27.000		54.0	21.6	60	16.7	117.5	22.0	81	49.2	2.9	1.1	62	.928
OCT	544.400	17.500	25.400	38.000	94.0	30.0	68	34.8	190.8	19.4	89	93.3	5.4	1.3	75	2.232
NOV	519.400	17.300	24.100	40.000	86.0	18.5	78	35.0	134.5	21.9	83	58.4	4.1	1.1	73	1.558
DEC	607.000	19.500	42.700	60.300	48.5	21.5	55	16.3	129.3	21.1	83	65.6	2.7	.7	74	1.214
TOTAL	6664.800							282.6				932.3				17.782
AVERAGE		18.146			72.3	28.6	60		164.3	24.6	85		3.9	1.1	69	
MAXIMUM			61.800	60.300												
NO. OF SAMPLES					22	22			272	272			23	23		

DESIGN DATA - METRIC

POINT EDWARD

PROJECT Village of Point Edward WPCP

PROJECT NO. 2-0036-59

TREATMENT Primary

DESIGN FLOW 2.591 $10^3 m^3/d$

DESIGN POPULATION 5, 700

BOD - Raw Sewage 170 mg/l
- Removal 47%

SS - Raw Sewage 200 mg/l
- Removal 60%

RAW SEWAGE PUMPS

Type: Fairbanks-Morse
Size: Two 9R.41 l/s at 10.7m TPH

PRIMARY TREATMENT

Screening

Type: Bar screens, manually cleaned
Size: Two, 31.75mm spacing

Grit Removal

Type: Channels
Size: Two 4.9m x 0.5m x 0.6m
Retention: 0.8R min.

Primary Sedimentation

Type: Dorr
Size: One 10.7m dia x 3.0m swd
Volume: 272.76m^3
Retention: 2.53 hr.
Loading: Surface 29.03 $m^3/m^2 \cdot d$
Weir 77.33 $m^3/m \cdot d$

CHLORINATION

Type: BIF
Size: One 90.72 kg/d
Chlorine Contact Chamber

Size: One 6.1m x 3.05m x 2.6m
Volume: 48.188 m^3
Retention: 27 min.

OUTFALL

to St. Clair River

SLUDGE HANDLING

Digestion System - Single-stage

Type: Dorr: 2 draft tube mixers
Size: One 10.7m x 6.1m swd
Volume, 583.74m^3
Loading: 10.91 $kg/m^3 \cdot d$

PUMPING STATIONS
Storm Water

Type: Custom Built
Size: One 355.0 l/s at 6.1m TDH
Two 757.0 l/s at 6.1m TDH
with two 74.57kW diesel standbys

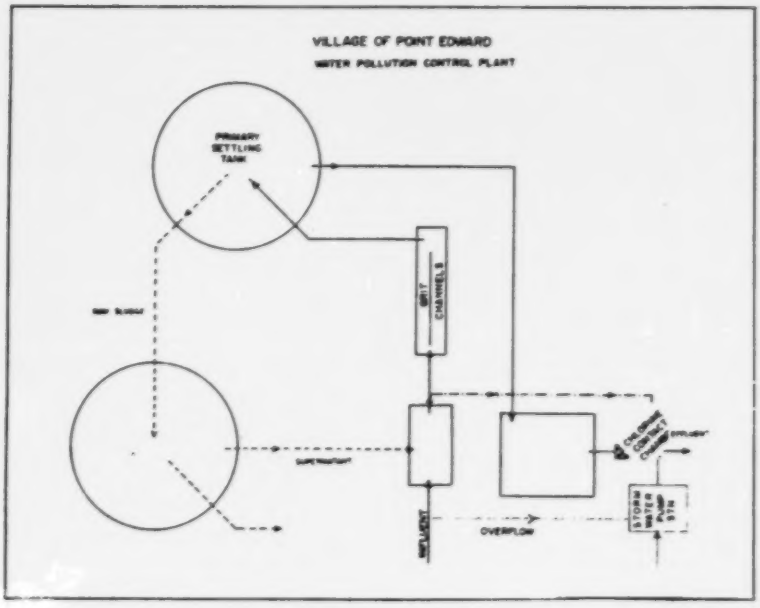
Helena Street

Type: Smith & Loveless
Package lift station
Size: Two 56.78 l/s at 12.2m TDH

Michigan Avenue

Type: Smith & Loveless
package lift station
Size: Two 37.85 l/s at 6.1m TDH

402 STATION (2-0193-63)
Type: Smith and Loveless
Package Lift Station
Size: Two 13.24 l/s at 7.0 TDH



PROJECT Village of Point Edward WPCP

PROJECT NO. 3-0036-59

TREATMENT Primary

DESIGN FLOW 0.57 mgd

DESIGN POPULATION 5,700

BOD - Raw Sewage 170 mg/l
- Removal 47%

SS - Raw Sewage 200 mg/l
- Removal 60%

RAW SEWAGE PUMPS

Type: Fairbanks-Morse
Size: Two 1300 lgpm @ 35' tdh

PRIMARY TREATMENT

Screening

Type: Bar screens, manually cleaned
Size: Two, 1¼" spacing

Grit Removal

Type: Channels
Size: Two 16 X 1.75 X 2'
Retention: 0.8R min

Primary Sedimentation

Type: Dorr
Size: One 35' dia x 10' swd
(60,000 imp. gal)
Retention: 2.53 hr
Loading: Surface: 384 Imp. gal/ft²/day
Weir, 5,150 Imp. gal ft/day

CHLORINATION

Type: BIF
Size: One 200 lb/day
Chlorine Contact Chamber

Size: One 20 X 10 X 8½' (30,000 gal)
Retention: 27 min

OUTFALL

- to St. Clair River

SLUDGE HANDLING

Digestion System - Single-stage

Type: Dorr: 2 draft tube mixers
Size: One 35' dia x 20' swd (19,200 ft³) or 110,980 gal)
Loading: 2.07 lb/cu ft/mo

PUMPING STATIONS

Storm Water

Type: Custom Built
Size: One 4700 gpm @ 20' tdh
Two 10000 gpm @ 20' tdh
with two 100 hp diesel standbys

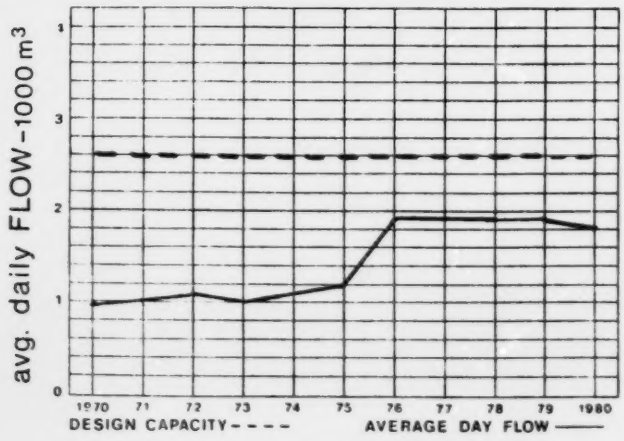
Helena Street

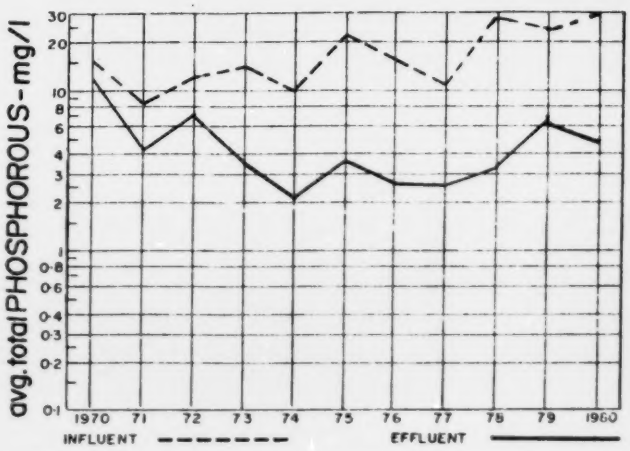
Type: Smith & Loveless
package lift station
Size: Two 750 gpm @ 40' tdh

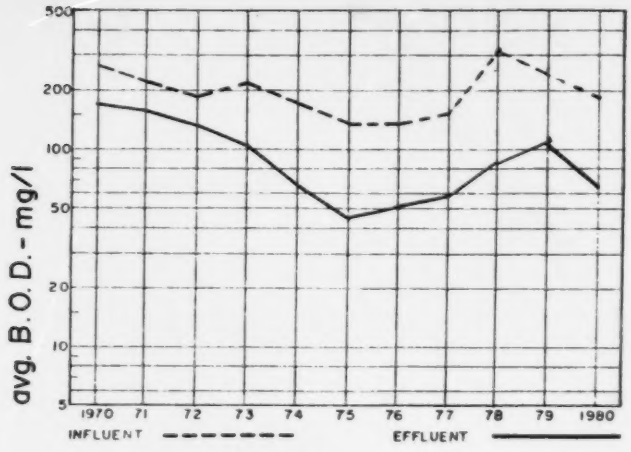
Michigan Avenue

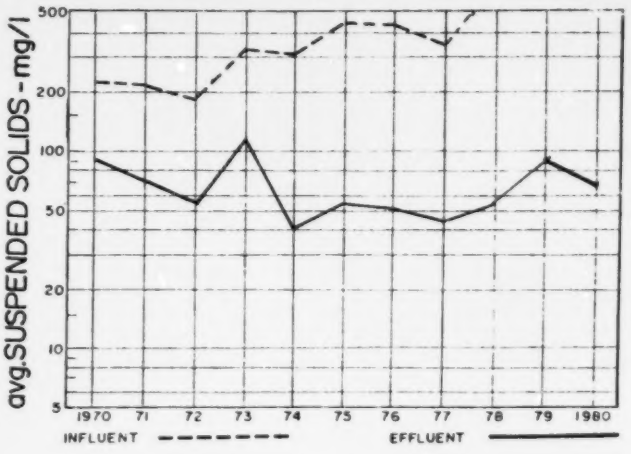
Type: Smith & Loveless
package lift station
Size: Two 500 gpm @ 20' tdh

402 STATION (2-0193-63)
Type: Smith and Loveless
Package Lift Station
Size: Two 175 gpm @ 23' tdh









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000597 POINT EDWARD MPCP

MUNICIPALITY : POINT EDWARD
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,417
POPULATION SERVED : 2,600
PERCENT SERVED : 107.5

* NO SAMPLES ANALYZED

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.591 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	57.010	1.840	2.060	2.730	200.0	125.0	37	4.2	422.0	150.0	64	15.5	20.2	11.5	43	.496
FEB	52.160	1.800	2.050	2.500	290.0	64.0	77	11.7	1394.0	50.0	96	70.1	70.0	2.8	96	3.505
MAR	58.860	1.900	2.350	3.000	*	*			*	*			*	*		
APR	60.890	2.030	2.630	3.540	200.0	44.0	78	9.4	783.0	28.0	96	45.9	30.0	2.6	91	1.668
MAY	55.230	1.780	2.380	3.500	42.0	55.0	-	-	176.0	57.0	67	6.5	11.2	2.8	75	.464
JUN	56.720	1.890	2.270	3.090	102.0	52.0	49	2.8	662.0	56.0	91	34.3	14.8	4.8	67	.567
JUL	59.830	1.930	2.420	2.680	112.0	55.0	50	3.4	384.0	45.0	88	20.2	15.3	2.6	83	.760
AUG	62.670	2.020	2.650	3.090	135.0	48.0	64	5.4	240.9	42.3	82	12.4	14.0	3.2	77	.677
SEP	57.660	1.920	2.120	2.810	245.0	52.0	78	11.1	1590.8	53.3	96	88.6	48.0	3.1	93	2.589
OCT	55.840	1.800	1.980	2.730	212.0	57.8	72	8.6	852.4	72.6	91	43.5	42.5	4.1	90	2.144
NOV	49.510	1.650	1.820	2.410	225.0	56.0	75	8.3	1671.2	94.6	94	78.0	77.0	4.9	93	3.570
DEC	52.320	1.690	1.960	2.360	225.0	112.0	50	5.9	525.0	155.8	70	19.3	25.8	12.2	52	.712
TOTAL	678.700							71.2				434.8				17.152
AVERAGE		1.854			180.7	65.5	63		791.0	73.1	90		33.5	4.9	85	
MAXIMUM			2.650	3.540												
NO. OF SAMPLES					11	11			11	11			11	11		

Ministry of the Environment
Ontario

West Central Region

②

REGIONAL OFFICE

STONEY CREEK

HAMILTON
119 King St. W.
P.O. BOX 2112
811-521-7640

DISTRICT OFFICES

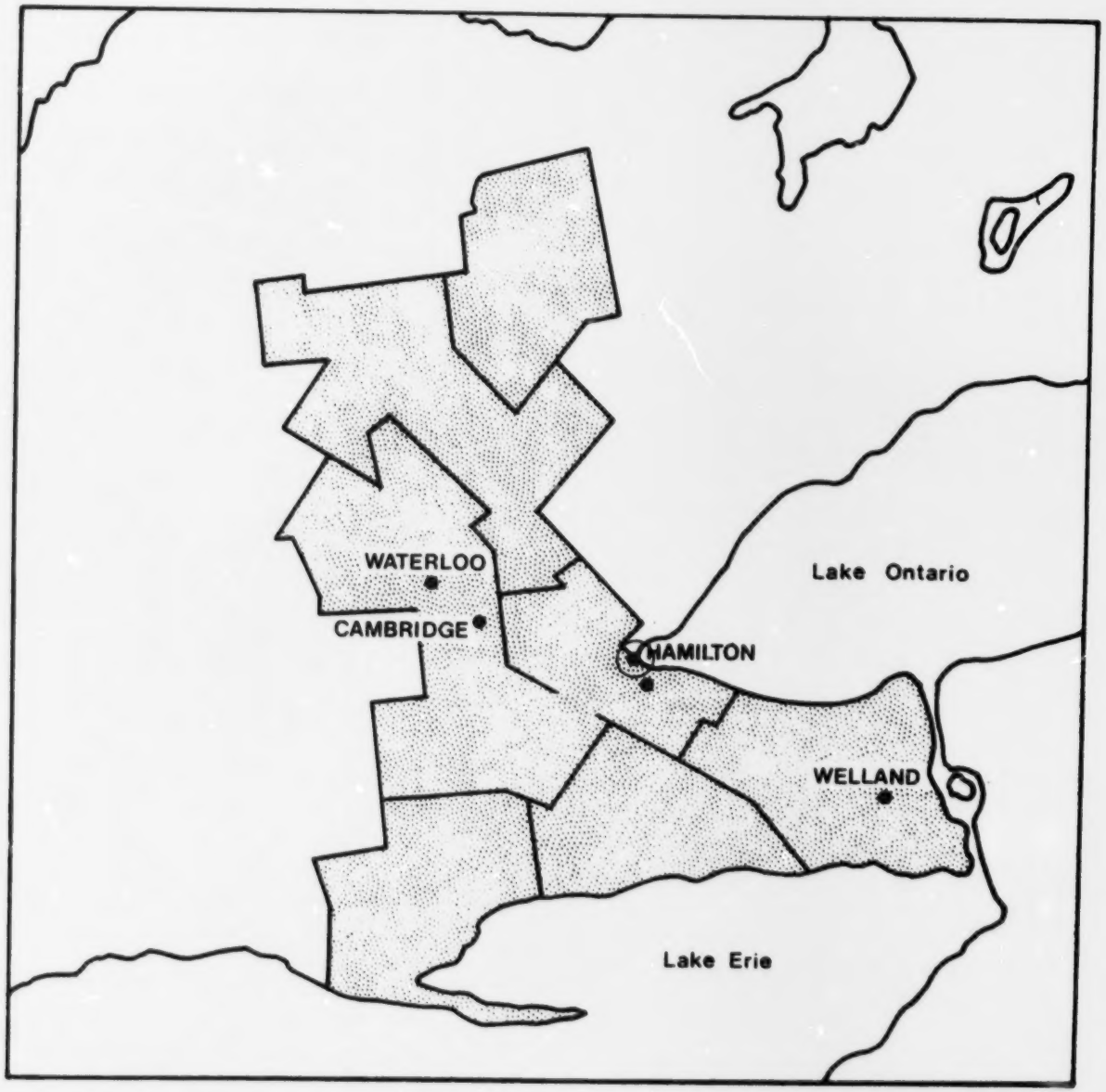
Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

Ministry of the Environment
Ontario

West Central Region

②



DESIGN DATA - METRIC

NANTICOKE (PORT DOVER)

PROJECT: City of Nanticoke
Port Dover WPCP

PROJECT NO.: 2-0115-62

TREATMENT: Primary

DESIGN FLOW: 4.091 x $10^3 m^3/c$

DESIGN POPULATION: 5,300

BOD - Raw Sewage 210 mg/l
- Removal 30%

SS - Raw Sewage 296 mg/l
- Removal 60%

RAW SEWAGE PUMPS

Type: Worthington
Size: One 60.6 l/s @ 7.3m TDH
One 37.9 l/s @ 7.3m TDH
Two 132.5 l/s @ 7.6m TDH

PRIMARY TREATMENT

Grit Removal

Type: Aerated, mechanical grit collector (Rex Chainbelt)
Size: One 6.1m x 3.05m x 3.6m
Volume: 67.05m^3
Retention: 10 min.

Air Supply

Type: Roots-Connersville
Size: One 22.98 l/s
One 27.16 l/s

Primary Sedimentation

Type: Rex Chainbelt
Size: Three 22.86m x 4.6m x 2.4m
Volume: 763.73 m^3
Retention: 1.93 hr.
Loading: Surface, 30.31 $m^3/m^2.d$
Weir, 692.35 $m^3/m.d$

CHLORINATION

F & P automatic

Chlorine Contact Chamber

Size: One 6.5m x 5.5m x 2.0m
Volume: 72.51 m^3
Retention: 11 min.

OUTFALL

to Lake Erie

SLUDGE HANDLING

Aerated holding tank, one 6.1m x 4.6m x 2.5m (Avg)
Size: 69.67 m^3

Vacuum Filter

Type: Eimco (cloth)
Size: One 18.58 m^2

PUMPS -- TYPE and SIZE

#1 Pumping Station (custom-built)

Type: Worthington
Size: Three 132.5 l/s @ 20.1m TDH
(station has one Barminutor, Model C)

#2 Pumping Station (prefabricated)

Type: Fairbanks-Morse
Size: Two 21.5 l/s @ 14.6m TDH

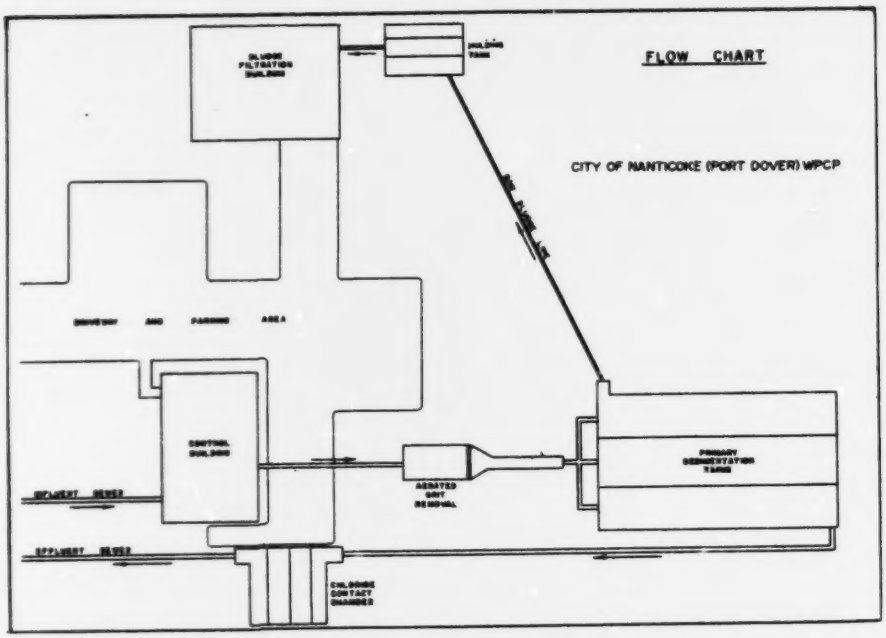
#3 Pumping Station (prefabricated)

Type: Fairbanks-Morse
Size: Two 15.7 l/s @ 19.8m TDH

#4 Pumping Station

Type: Flygt submersible
Size: Two 16.4 l/s @ 5.8m TDH

NOTE: Above pumping stations have overflows to Lynn River



DESIGN DATA - IMPERIAL

PROJECT NO. 2-0115-62

TREATMENT Primary

DESIGN FLOW 0.900 MIGD

DESIGN POPULATION 5,300

BOD - Raw Sewage 210 mg/l
- Removal 30%

SS - Raw Sewage 296 mg/l
- Removal 60%

RAW SEWAGE PUMPS

Type: Worthington
Size: One 800 gpm @ 24' tdh
One 500 gpm @ 24' tdh
Two 1750 gpm @ 25' tdh

PRIMARY TREATMENT

Grit Removal

Type: Aerated, mechanical grit collector (Rex Chainbelt)
Size: One 20' x 10' x 11.85'
(14,750 gal)
Retention: 10 min

Air Supply

Type: Roots-Connersville
Size: One 55 cfm
One 65 cfm

Primary Sedimentation

Type: Rex Chainbelt
Size: Three 75' x 15' x 8'
(168,000 gal)
Retention: 1.93 hr
Loading: Surface, 620 gal/ft^2/day
Weir, 46,500 gal/ft/day

CHLORINATION

F & P automatic

Chlorine Contact Chamber

Size: One 21½' x 18' x 6½'
(15,950 gal)
Retention: 11 min

OUTFALL

to Lake Erie

SLUDGE HANDLING

Aerated holding tank, one
20' x 15' x 8.2' (avg)
Size: 2,460 ft^3 or 12,750 gal

Vacuum Filter

Type: Eimco (cloth)
Size: One 200 sq ft

PUMPS -- TYPE and SIZE

#1 Pumping Station (custom-built)

Type: Worthington
Size: Three 1750 gpm @ 66' tdh
(station has one Barminutor, Model C)

#2 Pumping Station (prefabricated)

Type: Fairbanks-Morse
Size: Two 417 gpm @ 48' tdh

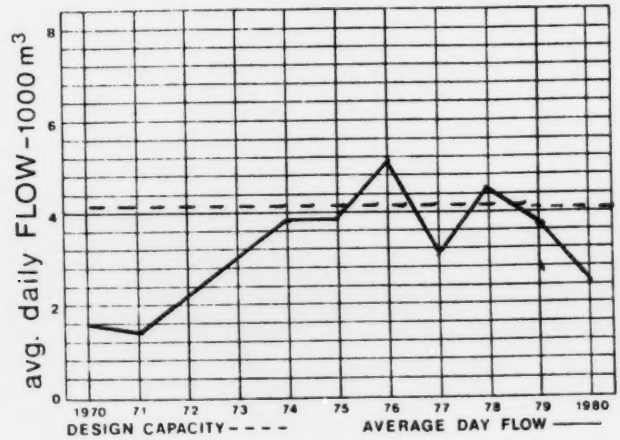
#3 Pumping Station (prefabricated)

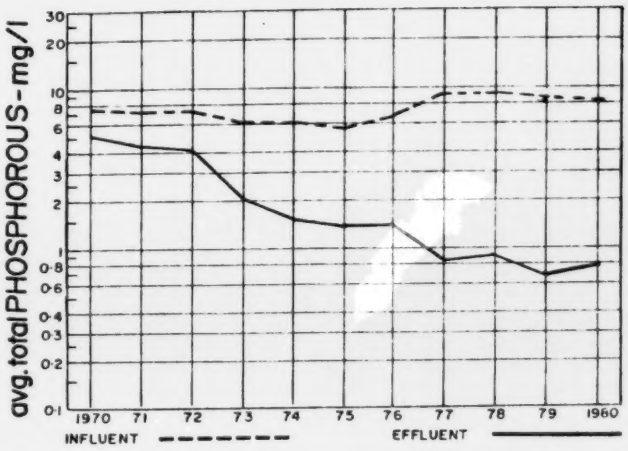
Type: Fairbanks-Morse
Size: Two 207 gpm @ 65' tdh

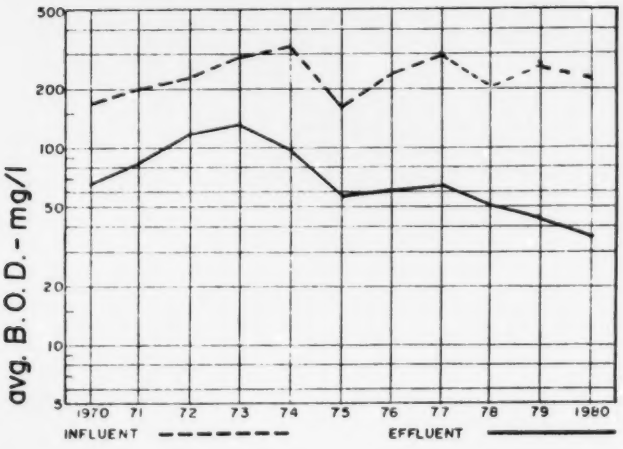
#4 Pumping Station

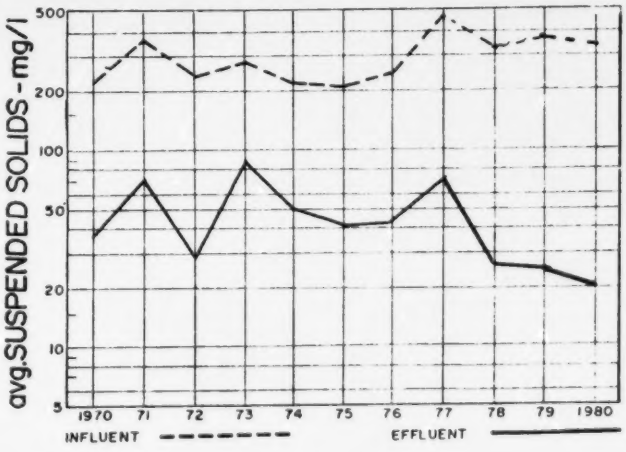
Type: Flygt submersible
Size: Two 217 gpm @ 19' tdh

NOTE: Above pumping stations have overflows to Lynn River









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000604 NANTICOKE (PORT DOVER)

MUNICIPALITY : NANTICOKE (PORT DOVER)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 18,829
POPULATION SERVED : 2,700
PERCENT SERVED : 14.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.091 1000 M3 DESIGN BOD5 : 210.0 MG/L DESIGN SUSP.SOLIDS : 296.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	94.550	3.030	5.850	9.300	222.0	27.0	87	18.4	212.0	8.2	96	19.2	6.5	.5	91	.565
FEB	80.760	2.784	3.350	9.300	300.0	30.0	90	21.8	242.0	18.0	92	18.0	9.3	.5	93	.705
MAR	102.160	3.295		18.200	77.0	15.5	79	6.2	117.5	21.0	82	9.8	3.8	.7	81	.316
APR	110.650	3.690	5.030	15.900	121.5	26.6	78	10.5	686.5	22.0	96	73.5	6.9	.4	94	.719
MAY	85.090	2.744	3.770	9.300	222.5	50.0	77	14.6	194.0	35.0	81	13.5	12.1	1.2	90	.927
JUN	58.350	1.945	4.060	20.400	152.0	55.0	63	5.6	148.5	10.2	93	8.0	9.0	.3	96	.506
JUL	58.520	1.888	4.090	10.900	119.5	78.0	34	2.4	211.5	55.1	73	9.1	5.0	1.6	67	.196
AUG	65.850	2.120	2.490	9.300	317.5	77.0	75	15.8	442.3	14.6	96	28.1	9.0	.6	92	.548
SEP	74.840	2.494	4.140	20.400	*	*			234.8	17.5	92	16.2	9.7	.8	91	.666
OCT	83.980	2.710	5.100	13.000	700.0	11.2	98	57.8	1222.0	25.6	97	100.4	21.5	2.3	89	1.612
NOV	69.410	2.313	3.170	4.545	209.5	28.0	86	12.5	231.0	12.7	94	15.1	6.7	.7	89	.416
DEC	80.580	2.599	4.570	10.900	204.0	36.0	82	13.5	228.0	7.5	96	17.7	4.6	.8	82	.306
TOTAL	964.740							179.6				329.3				7.482
AVERAGE		2.634			240.5	39.4	83		347.5	20.6	94		8.6	.8	89	
MAXIMUM			5.850	20.400												
NO. OF SAMPLES					21	20			22	22			22	22		

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

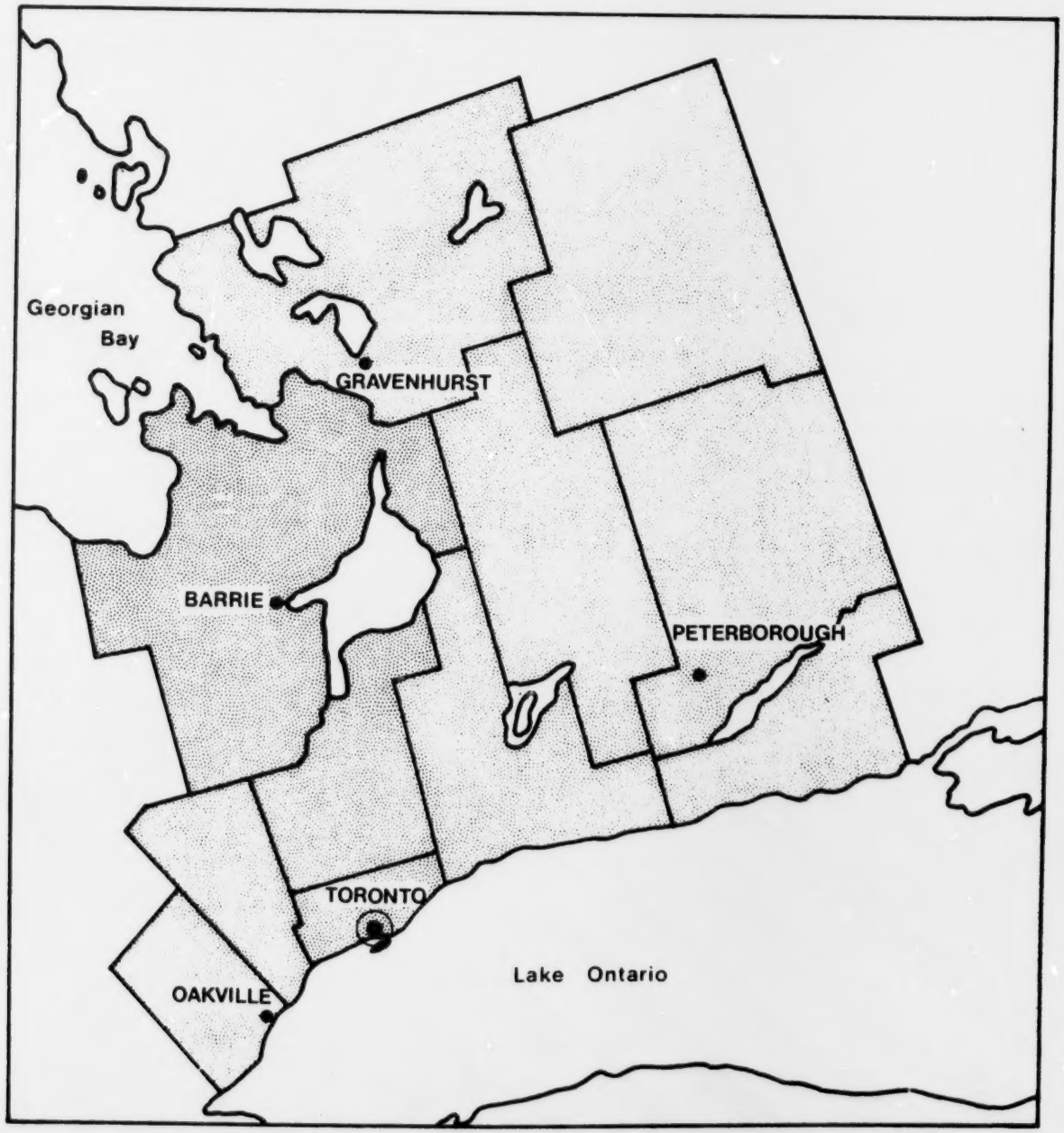
SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386

Ministry
of the
Environment
Ontario

Central Region

③



DESIGN DATA - METRIC

MIDLAND

PROJECT Town of Midland WPCP

PROJECT NO. 2-0146-63

TREATMENT Primary

DESIGN FLOW 5.683 $10^3 m^3/d$

DESIGN POPULATION 12,500

BOD - Raw Sewage 225 mg/l
- Removal 40%

SS - Raw Sewage 300 mg/l
- Removal 60%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C

Grit Removal

Type: Dorr Detritor
Size: One 3.67m x 3.67m x .41m ($5.46 m^3$)
Retention: 3.38 min.

Primary Sedimentation

Type: Dorr
Size: Two 5.24m dia. x 2.44m swd
Volume: 886.47 m^3
Retention: 3.7% hours
Loading: Surface, 15.595 $m^3/m^2.d$
Weir, 59.1 $m^3/m.d$

CHLORINATION

Type: W & T, Type A711 (Auto)
Size: One 453.6 kg/day

Chlorine Contact Chamber

Size: Irregular ($73.65 m^3$)
Retention: 18.7 min.

OUTFALL

187.45m of 609.6mm pipe to Georgian Bay.

SLUDGE HANDLING

Digestion System - Two Stage

Primary --
Type: Babcock-Wilson
Draft tube mixers (2)
Size: One 9.14m dia. x 6.71m
Volume: 441.87 m^3
Loading: 68.9 $kg/m^3/mon$

Secondary --
Type: Fixed steel cover
size: One 9.14 m dia. x 6.55 m
Volume: 430.05 m^3
Total Loading: 32.5 $kg/m^3/mo.$

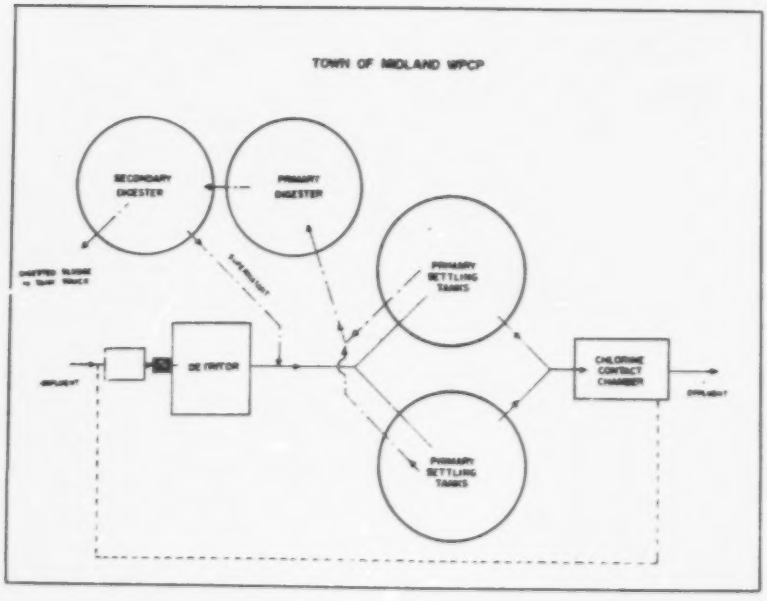
PUMPING STATIONS

#1 Pumping Station

Type: Worthington
Size: Two 59.05 l/s @ 11.27m TDH
One 196.82 l/s @ 18.29m TDH

#2 Pumping Station

Type: Flygt (submersible)
Size: Two, each 14.38 l/s @ 9.14m TDH



DESIGN DATA - IMPERIAL

PROJECT	Town of Midland WPCP
PROJECT NO.	2-0146-63
TREATMENT	Primary
DESIGN FLOW	1.25 mgd
DESIGN POPULATION	12,500
BOD - Raw Sewage	225 mg/l
- Removal	40%
SS - Raw Sewage	300 mg/l
- Removal	60%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C

Grit Removal

Type: Dorr Detritor
Size: One 12' x 12' x 18"
(1,200 gal)
Retention: 1.38 min

Primary Sedimentation

Type: Dorr
Size: Two 50' dia x 8' swd
195,000 gal)
Retention: 3.75 hours
Loading: Surface, 319 $gal/ft^2/day$
Weir, 3970 gal/ft/day

CHLORINATION

Type: W & T, Type A711 (Auto)
Size: One 1000 lb/day

Chlorine Contact Chamber

Size: Irregular (16,200 gal)
Retention: 18.7 min

OUTFALL

615' of 24" pipe to Georgian Bay

SLUDGE HANDLING

Digestion System - Two Stage

Primary --
Type: Babcock-Wilson
Draft tube mixers (2)
Size: One 30' dia x 22' (15,600 cu ft or 97,200 gal)
Loading: 4.3 lb/cu ft/mo

Secondary --
Type: Fixed steel cover
Size: One 30' dia x 21½' (15,200 cu ft or 94,600 gal)
Total Loading: 2.2 lb/cu ft/mo

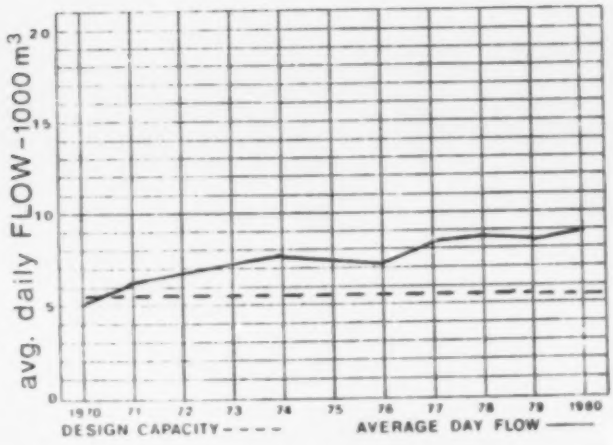
PUMPING STATIONS

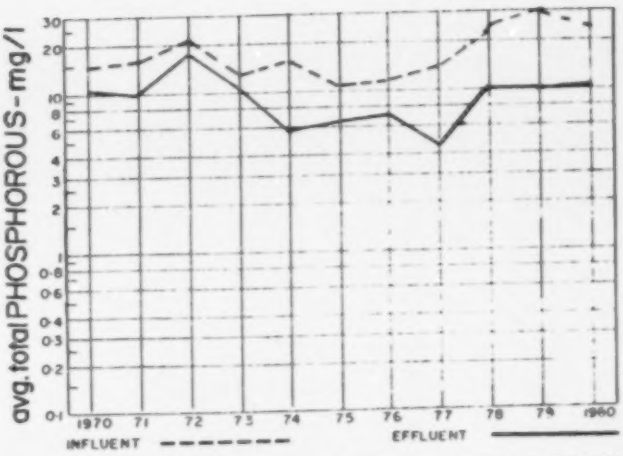
#1 Pumping Station

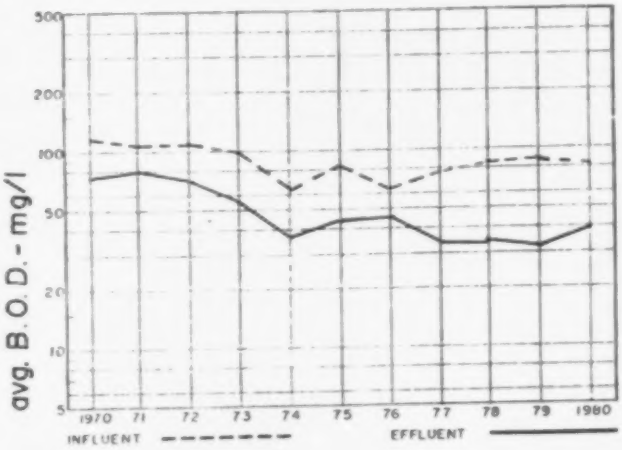
Type: Worthington
Size: Two 740 gpm @ 37' tdh
One 2600 gpm @ 60' tdh

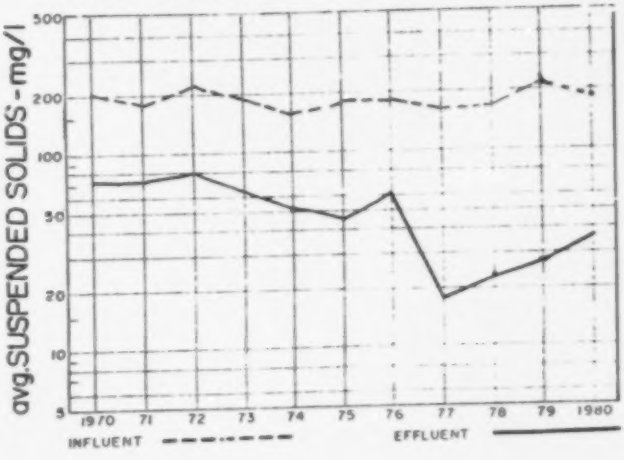
#2 Pumping Station

Type: Flygt (submersible)
Size: Two, each 190 gpm @ 30' tdh









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000463 MIDLAND WPCP (OPER SM & EXP 3. MG 81)

MUNICIPALITY : MIDLAND
REGION : 03 CENTRAL

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 12,500
POPULATION SERVED : 12,000
PERCENT SERVED : 96.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 13.638 1000 M3 DESIGN BOD5 : 225.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	265.062	8.550	11.200	23.000	80.0	40.0	50	10.6	195.0	25.0	87	45.0	25.0	7.6	69	4.612
FEB	244.332	8.425	10.330	13.500	90.0	44.0	51	11.2	145.0	35.0	75	26.8	18.0	14.0	22	.977
MAR	330.551	10.662	23.044	27.000	90.0	36.0	60	17.8	255.0	50.0	80	67.7	29.0	11.0	62	5.950
APR																
MAY			OPERATIONAL		SWITCH		TO		MUNICIPAL							
JUN																
JUL																
AUG																
SEP																
OCT																
NOV																
DEC																
TOTAL	839.945							39.6				139.7				11.539
AVERAGE		9.212			86.6	40.0	53		198.3	36.6	81		24.0	10.8	54	
MAXIMUM			23.044	27.000												
NO. OF SAMPLES					3	3			3	3			3	3		

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Ministry of the Environment
Ontario

Southeastern Region

④

DESIGN DATA - METRIC

CORNWALL

PROJECT: City of Cornwall WPCP

PROJECT NO: 1-0001-66

DESIGN FLOW: 37.5 $10^3 m^3/d$

DESIGN POPULATION: 66,000

DESIGN LOADING:

BOD - 130 mg/l

SS - 160 mg/l

Treatment: Primary

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: Two Type "C"

Screening (Bypass channel)

Size: 50 mm spacing

Grit Removal

Type: Aerated: grit removed by clamshell bucket
Size: Two 11.7m x 4.8m x 4.1m ($647.8 m^3$)
Retention: 17 min

Air Supply

Type: Hoffman
Size: Two 459.7 l/s (also for channel aeration)

Primary Sedimentation

Type: Jeffrey
Size: Two 44.2m x 5.5m x 3.7m ($5.56 \times 10^3 m^3$)
Retention: 3 hours
Loading Surfaces: $8.9 m^3/m^2 \cdot d$
Weir: $213.1 m^3/m \cdot d$

CHLORINATION

Chlorinator

Type: W & T
Size: One 907.2 kg/d with evaporator

Chlorine Contact Chamber

Size: One 14.0m x 8.2m x 3.2m ($390.0 m^3$)
Retention: 15 min

OUTFALL

- to St. Lawrence River

SLUDGE HANDLING

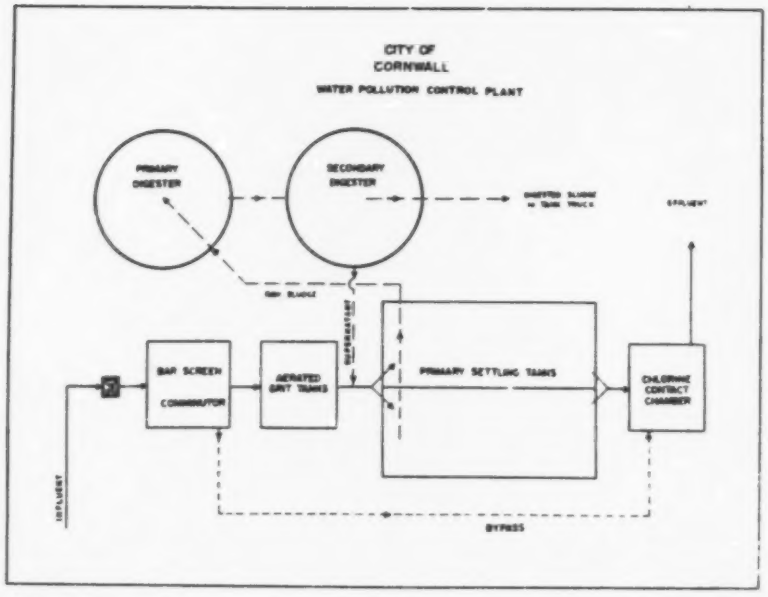
Digestion System - Two-stage

Primary Digester -
Type: Perth (gas mixed) with fixed concrete cover.
Size: One 19.8m dia. x 7.3m swd ($2336.4 m^3$)
Loading: $29.4 kg/m^3 \cdot d$

Secondary Digester -
Size: 19.8m dia x 7.3m swd ($2336.4 m^3$)
Total Loading: $14.69 kg/m^3 \cdot d$

Disposal

- by tank truck



DESIGN DATA - IMPERIAL

PROJECT City of Cornwall WPCP

PROJECT NO. 1-0001-66

DESIGN FLOW 8.25 mgd

DESIGN POPULATION 66,000

DESIGN LOADING

BOD - 130 mg/l

SS - 160 mg/l

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: Two Type "C"

Screening (Bypass channel)

Size: 2" spaces

Grit Removal

Type: Aerated, grit removed by clamshell bucket
Size: Two 38' 8" x 15' 10" x 13' 5" swd (98,500 gal)
Retention: 17 min

Air Supply

Type: Hoffman
Size: Two 1,100 scfm (also for channel aeration)

Primary Sedimentation

Type: Jeffrey
Size: Two 143' x 48' x 12' (1.245 mil gal)
Retention: 3 hours
Loading: Surface, 800 gal/ft^2/day
Weir, 14300 gal/ft/day

CHLORINATION

Chlorinator

Type: W & T
Size: One 2,000 lb/day with evaporator

Chlorine Contact Chamber -

Size: One 48' 7" x 26' 11" x 10' 6" (85,800 gal)
Retention: 15 min

OUTFALL

- to St. Lawrence River

SLUDGE HANDLING

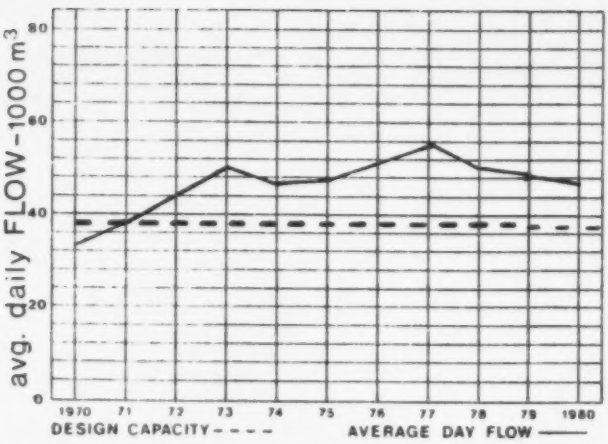
Digestion System - Two-stage

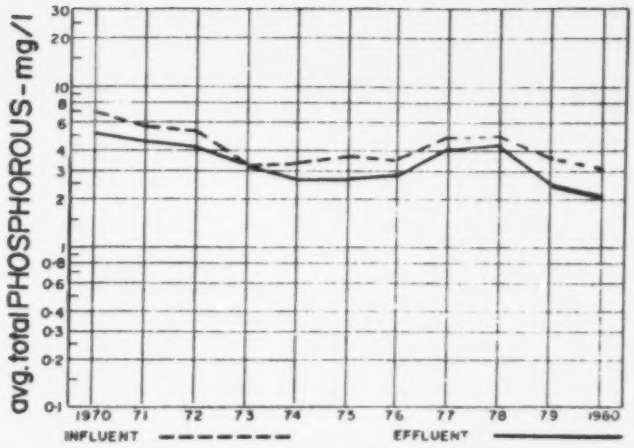
Primary Digester -
Type: Perth (gas mixed) with fixed concrete cover
Size: One 65' dia x 24' swd (82,500 cu ft or 0.515 mil gal)
Loading: 2.88 lb/cu ft/mo

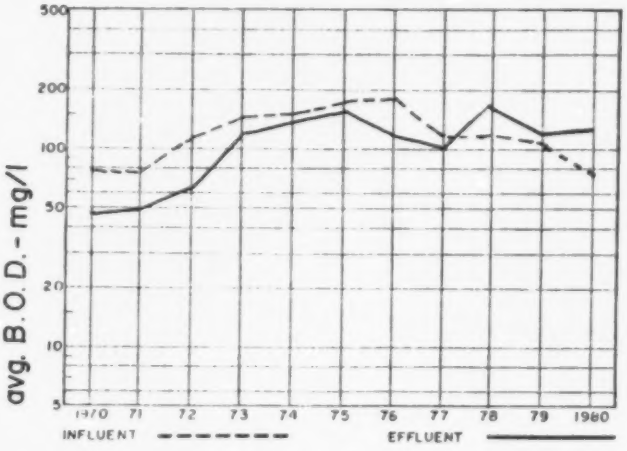
Secondary Digester -
Size: One 65' dia x 24' swd (82,500 cu ft or 0.515 mil gal)
Total Loading: 1.44 lb/cu ft/mo

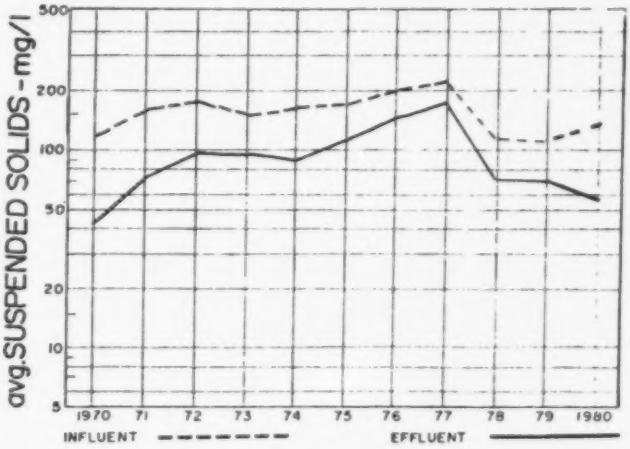
Disposal

- by tank truck









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000132 CORNWALL WPCP

MUNICIPALITY : CORNWALL
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL
(THIS SYSTEM TREATS INDUSTRIAL WASTES)

CURRENT POPULATION : 46,152
POPULATION SERVED : 46,500
PERCENT SERVED : 100.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 37.504 1000 M3 DESIGN BOD5 : 130.0 MG/L DESIGN SUSP.SOLIDS : 160.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	1281.000	41.300	66.300	83.000	230.0	90.0	60	179.3	93.3	81.6	12	14.9	3.2	2.6	18	.769
FEB	1041.600	35.900	37.800	66.000	138.0	92.5	32	47.3	89.0	54.0	39	36.4	3.7	2.7	25	1.021
MAR	1593.500	51.400	84.300	104.000	45.0	61.0	-	-	102.2	61.8	39	64.3	2.9	2.1	29	1.418
APR	1842.200	61.400	95.700	104.000	79.0	78.0	1	1.8	157.4	60.2	61	179.0	2.5	2.6	-	-
MAY	1334.900	43.100	63.400	118.000	155.0	95.0	38	80.0	104.7	36.7	64	90.7	3.4	2.8	17	.801
JUN	1100.600	36.700	48.700	92.000	195.0	120.0	38	82.5	164.0	73.3	55	99.8	5.1	2.4	52	2.972
JUL	1277.000	41.200	66.200	106.000	73.3	51.0	30	28.4	145.4	61.4	57	107.2	3.5	2.2	37	1.660
AUG	1392.600	44.900	68.200	106.000	108.5	21.5	80	121.1	276.0	57.2	79	304.7	3.5	1.5	56	2.729
SEP	1501.300	50.040	81.800	107.000	183.0	90.0	50	139.6	121.0	38.0	68	124.6	2.9	2.2	24	1.051
OCT	1469.600	47.410	78.000	104.000	94.5	60.0	36	50.7	74.0	69.5	6	6.6	3.0	2.3	23	1.058
NOV	1566.000	52.200	82.400	100.000	50.0	46.5	7	5.4	120.8	60.8	49	97.9	2.9	2.0	30	1.378
DEC	1581.800	51.030	87.400	104.000	69.0	125.5	-	-	115.4	47.7	58	107.1	1.8	1.3	27	.775
TOTAL	16982.100							736.6				1229.7				15.632
AVERAGE		46.382			118.3	77.5	34		130.2	58.5	55		3.2	2.2	30	
MAXIMUM			95.700	118.000												
NO. OF SAMPLES					27	26			58	57			98	97		

DESIGN DATA - METRIC

PROJECT: Petawawa, DND, WPCP

PROJECT NUMBER: 1-0135-67

TREATMENT: Primary with 2 stage digestion

DESIGN FLOW: 7.27 $10^3 m^3/d$

DESIGN POPULATION: 16,761

DESIGN LOADING:

BOD 110 mg/l
SS 80 mg/l

PUMPING STATIONS

#1 Petawawa Street

2 pumps, 5.53 l/s and 1.12 kW each, 15 kW generator

#2 Harry Street

2 pumps, 20.82 l/s and 14.9 kW each 50 kW generator

PRIMARY TREATMENT

Grit Channels
Type: Two straight line rectangular grit washing channels
Velocity: .305 m/s

Comminution

Type: Barminutor
Size: 457.2 mm

Parshall Flume

Size: 228.0 mm width x 609.6 mm depth with 50.8 m pressure tape at gauging point.

PETAWAWA

Aerated Grit and Pre-aeration Tanks

Type: Two combined function tanks
Detention: 30 min. at a flow of 7.27 $10^3 m^3/d$
Flow Velocity: 0.61 m/s
Air Velocity: 1.42 l/s
(provided by positive rotary blower)

Primary Settling Tank

Size: Two, 9.75 m x 9.75 m x 2.39 m
Detention: 92 min
Surface settling rate: 38.12 $m^3/m^2 \cdot d$
Overflow trough:
Overflow rate: 134.1 $m^3/m \cdot d$
Pumps: Two plunger type pumps
Volume: 7.57 l/s
Speed: 50 R/min

CHLORINATION

Chlorine: Contact chamber: none, instead chlorine added to effluent sewage in a manhole on the outfall sewer
Detention: 19 min at a flow of 7.3 $10^3 m^3/d$ with minimum river elevation of 111 m.

OUTFALL

Size: 304.8 mm dia.
Wastewater goes to the Petawawa River then to the Ottawa River with sludge digestion.

SLUDGE HANDLING

Two-Stage Anaerobic Digestion

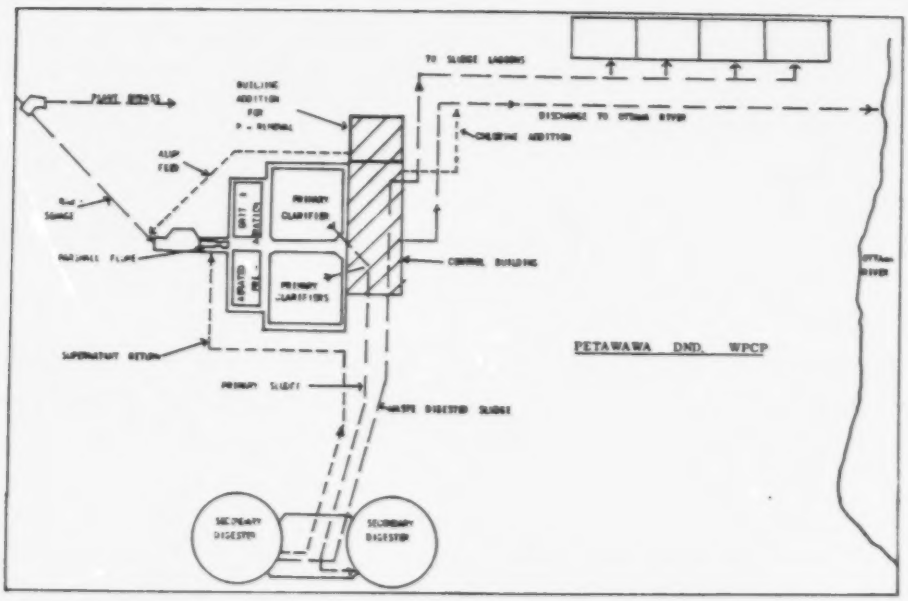
Primary Digestion
Type: Heated
Volume: 836.29 m^3
Mixing: Provided by a gas lifter with a diffusion head
Educator tube: Encloses diffuser 508.0 mm dia - 16 mm thick steel)
Sludge heating: 2.97 m^2 external heat exchanger

SECONDARY DIGESTION

Type: Unheated
Volume: 765.77 m^3
Gas storage capacity: 24.07 m^3 at a working pressure of 214.9 mm W.C
Tank cover travel area: 3.66 m^2

PHOSPHORUS REMOVAL

Chemical Used: Alum
Storage Facilities: 22.73 m^3 F.R.P. tank
1.36 m^3 F.R.P. tank
Two, 0.45 m^3 F.R.P. Tanks



DESIGN DATA - IMPERIAL

PROJECT: Petawawa, DND, WPCP

PROJECT NUMBER: 1-0135-67

TREATMENT: Primary with 2-stage digestion

DESIGN FLOW: 1.6 MGD

DESIGN POPULATION: 16,761

DESIGN LOADING:

BOD 110 mg/l
SS 80 mg/l

PUMPING STATIONS

#1 Petawawa Street
2 pumps, 73 gpm and 1.5 HP each, 15 kW generator

#2 Harry Street

2 pumps, 275 gpm and 20 HP each, 50 kW generator

PRIMARY TREATMENT

Grit channels
Type: Two straight line rectangular grit washing channels
Velocity: 1 ft./sec.

Comminution
Type: Barminutor
Size: 18"

Parshall Flume

Size: 9" width x 24" depth with 2" pressure tap at gauging point.

PETAWAWA

Aerated Grit and Pre-aeration Tanks

Type: Two combined function tanks
Detention: 30 min. at a flow of 1.6 MIGD
Flow velocity: 2 ft./sec.
Air Velocity: 3 cu.ft./min
(provided by positive rotary blowers)

PRIMARY SETTLING TANK

Size: two, 32' x 32' x 7' 10"
Detention: 92 min.
Surface settling rate: 780 lg/$ft.^2$/d
Overflow trough: 91m
Overflow rate: 9000 lg/ft/d
Pumps: Two plunger type pumps
Volume: 100 I GPH
Speed: 50 rpm

CHLORINATION (Pre and Post)

Chlorine contact chamber: none,instead chlorine added to effluent sewage in a manhole on the outfall sewer
Detention: 19 min. at flow of 1.6 MIGD with minimum river elevation of 363.0 ft

OUTFALL

Size: 12" dia.
Wastewater goes to the Petawawa River then to the Ottawa River with sludge digested.

SLUDGE HANDLING

Two-Stage Anaerobic Digestion

Primary Digestion

Type: Heated
Volume: 29,530 $ft.^3$
Mixing: Provided by a gas lifter with a diffusion head
Educator tube: Encloses diffuser - 20 in. dia.
Sludge heating: 35 sq.ft. external heat exchanger

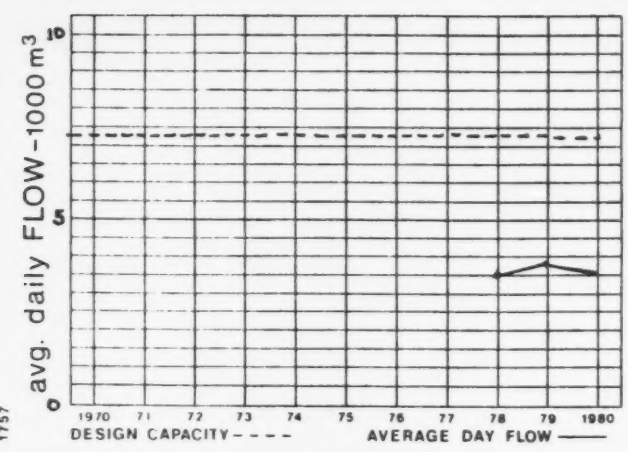
SECONDARY DIGESTION

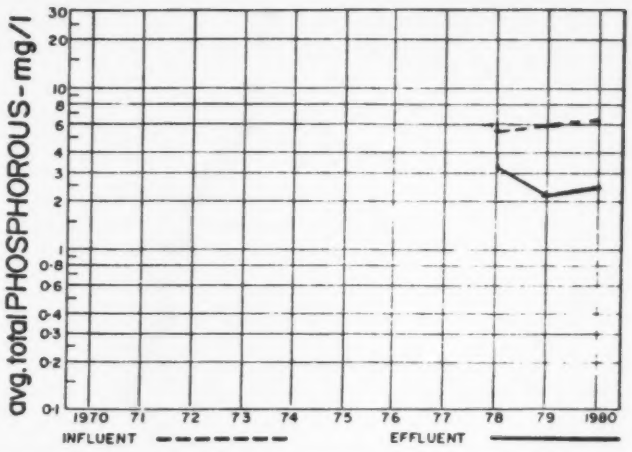
Type: Unheated
Volume: 27,040 $ft.^3$
Gas Storage Capcity: 8500 cu.ft. at a working pressure of 3.5" w.c.
Tank cover travel area: 12 ft.

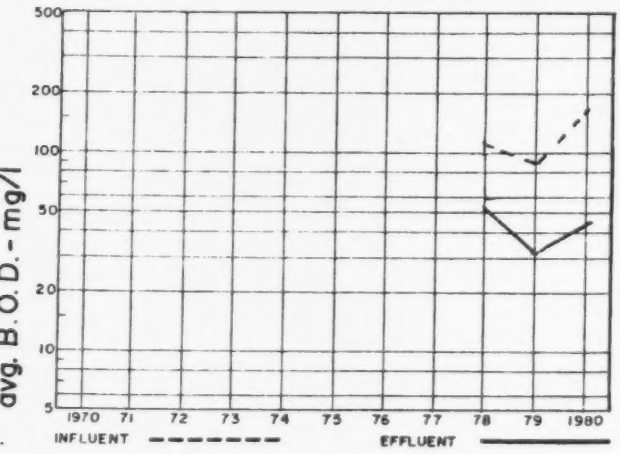
PHOSPHORUS REMOVAL

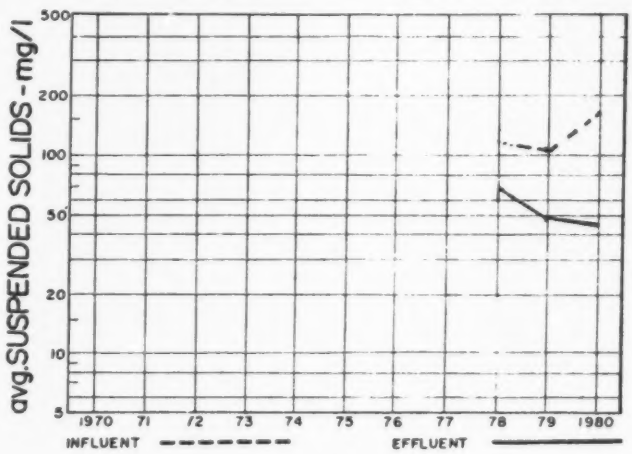
Chemical Used: Alum
Storgage Facilities: 5000 gallon F.R.P. tank
300 gallon F.R.P. tank
Two - 100 gallon F.R.P. tanks

PETAWAWA









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120000587 PETAWAWA M P C P

MUNICIPALITY : PETAWAWA
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 5,565
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 7.273 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	95.690	3.080	3.060		115.0	85.5	25	2.8	124.2	77.0	38	4.5	6.6	5.3	19	.124
FEB	81.400	2.800	3.290		195.0	60.0	69	10.9	131.0	75.5	42	4.5	6.4	3.6	42	.224
MAR	116.130	3.750	5.770		138.0	43.3	68	10.9	200.0	30.0	85	19.7	6.7	.8	87	.682
APR	110.170	3.670	4.450		154.0	41.0	73	12.4	217.5	56.0	74	17.7	5.4	2.1	61	.364
MAY	93.690	3.120	4.140		114.0	91.0	20	2.1	165.0	102.0	38	5.9	5.7	4.9	14	.075
JUN	95.930	3.197	3.570		170.0	32.0	81	13.2	123.0	16.0	86	10.2	6.7	.4	93	.600
JUL	99.300	3.200	7.760		118.0	16.0	86	10.1	90.0	24.0	73	6.5	5.9	1.3	77	.457
AUG	110.390	3.560	5.250		33.0	12.0	63	2.3	60.0	21.0	65	4.3	4.8	1.6	66	.353
SEP	76.541	2.551	3.580		145.0	12.0	91	10.1	95.0	13.0	86	6.2	5.8	.5	91	.406
OCT	105.970	3.410	3.920		510.0	24.0	95	51.5	400.0	48.0	88	37.3	10.0	1.8	82	.869
NOV	82.223	3.180	4.560		130.0	21.0	83	8.9	133.0	21.0	84	9.2	6.7	.8	88	.489
DEC	52.853	1.700	2.390		232.5	99.5	57	7.0	150.0	59.5	60	4.7	6.0	5.0	16	.053
TOTAL	1120.287							142.7				131.1				4.696
AVERAGE		3.102			171.2	44.7	73		157.3	45.2	71		6.3	2.3	63	
MAXIMUM			7.760													
NO. OF SAMPLES					23	24			20	31			30	31		

DESIGN DATA - METRIC

PRESCOTT

PROJECT Town of Prescott WPCP

PROJECT NO. 1-0023-66

TREATMENT Primary

DESIGN FLOW 4.456 $10^3 m^3/d$

DESIGN LOADING

BOD - 80 mg/l

SS - 160 mg/l

PRIMARY TREATMENT

Grit Removal

Type: Manually cleaned
Size: Two 8.0m x 1.1m x 1m
Flow Velocity: .304 m/s

Screening

Type: Manually cleaned
Size: 25.4mm openings

Comminution

Type: Worthington #15-5

Primary Sedimentation

Type: Dorr-Oliver
Size: Two 10.7 m dia x 2.7m swd.
Volume: 491.0 m^3
Retention: 2½ hours
Loading: Surface 48.9 $m^3/m^2.d$
Weir: 149. $m^3/m.d$

CHLORINATION

Type: Wallace & Tiernan: A831
Size: Two 22.7 Kg/day each

Chlorine Contact Chamber

Size. 153.7 m^3
Retention: 30 minutes

OUTFALL

504.0 m concrete pipe to
St. Lawrence River

SLUDGE HANDLING

Digestion System

Type: Single stage 10.7 x 5.5
Size: 107m dia x 5.5m swd (681.9 m^3)
Loading: 26.2 $kg/m^3/mo.$
Recirculation Pump: Smart Turner

PUMPING STATION

a) West Street

Two Smart-Turner, each 65.9 l/s @ 11.0m TDH

b) East Street

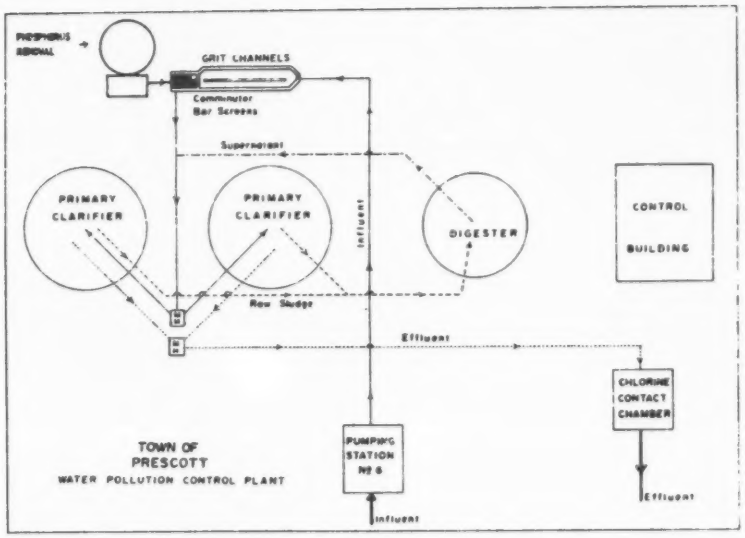
Two Smart-Turner, each 65.9 l/s @ 23.2m TDH

c) Highway 2 & Keefer Street

Two Smart-Turner, each 159.0 l/s @ 23.2m TDH

d) Plant Site

Two Smart-Turner 106 l/s @ 10.1m TDH
One Marathon variable speed



DESIGN DATA - IMPERIAL

PROJECT Town of Prescott WPCP

PROJECT NO. 1-0023-66

TREATMENT Primary

DESIGN FLOW 1.0 MIGD
DESIGN LOADING
BOD - 80 mg/l

SS - 160 mg/l

PRIMARY TREATMENT

Grit Removal

Type: Manually cleaned
Size: Two 26'2" x 3'9" x 3'4"
Flow Velocity: 1.0 fps

Screening

Type: Manually cleaned
Size: 1" openings

Comminution

Type: Worthington #15-5

Primary Sedimentation

Type: Dorr-Oliver
Size: Two 35' dia x 9' swd.
(108, 000 I. gals. total)
Retention: 2½ hours
Loading: Surface 1, 000 I. gals/ ft^2/day
Weir, 10, 000 I. gals/ ft/day

CHLORINATION

Type: Wallace & Tiernan A-831
Size: Two 50 lbs/day each

Chlorine Contact Chamber

Size: 33, 800 gal.
Retention: 30 minutes

OUTFALL

1650' 42" dia. concrete pipe to
St. Lawrence River

SLUDGE HANDLING

Digestion System

Type: Single stage
Size: 35' dia x 18 swd (150, 000 I.G.)
Loading: 1.6 $lb/ft^3/mo.$
Recirculation Pump: Smart Turner

PUMPING STATION

a) West Street

Two Smart-Turner, each 870 IGPM @ 36' tdh

b) East Street

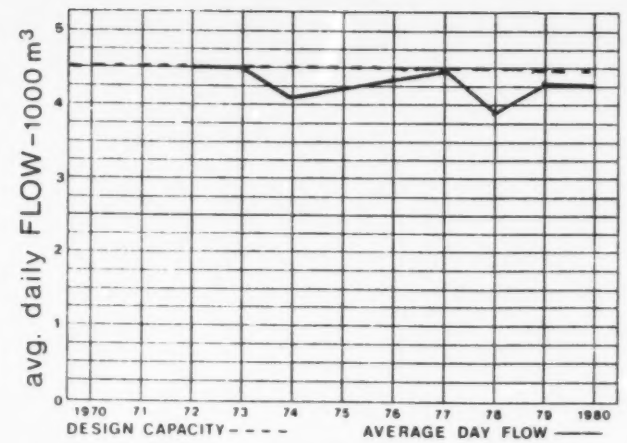
Two Smart-Turner, each 1410 IGPM @ 44' tdh

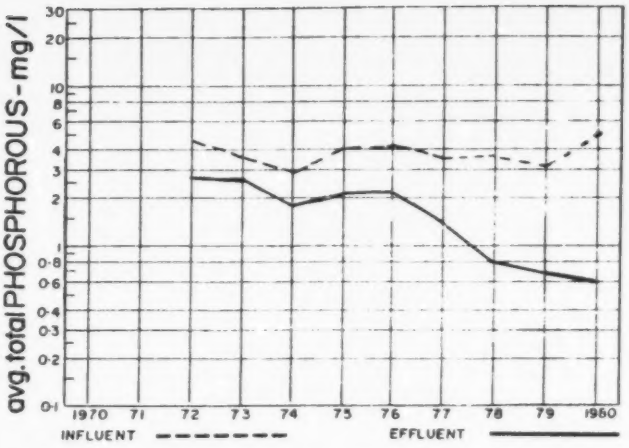
c) Highway 2 & Keefer Street

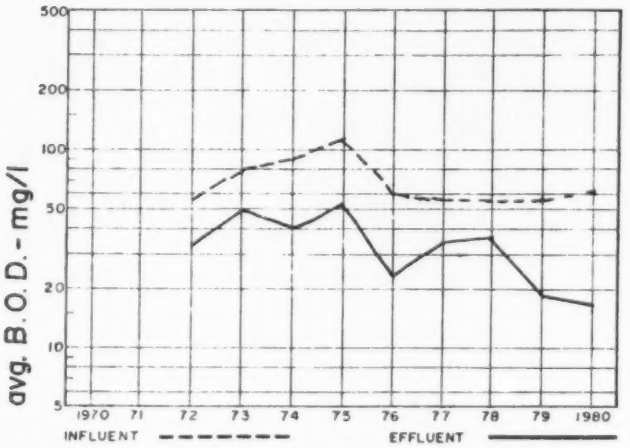
Two Smart-Turner, each 2100 IGPM @ 76' tdh

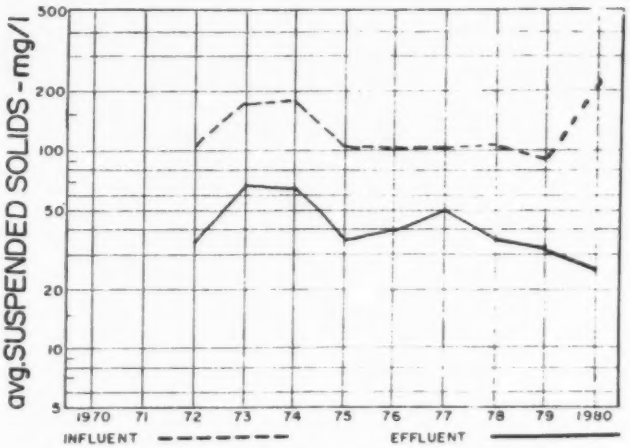
d) Plant Site

Two Smart-Turner 1400 IGPM @ 33' TDH
One Marathon variable speed









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001122 PRESCOTT MPCP

MUNICIPALITY : PRESCOTT
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 4,803
POPULATION SERVED : 4,800
PERCENT SERVED : 99.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.546 1000 M3 DESIGN BOD5 : 80.0 MG/L DESIGN SUSP.SOLIDS : 160.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	126.370	3.950	4.810		71.0	22.0	69	6.1	195.0	33.0	83	20.4	4.2	.9	78	.417
FEB	95.910	3.425	5.070		100.0	36.0	64	6.1	235.0	42.0	82	18.5	5.3	.8	84	.432
MAR	171.360	5.355	10.060		57.0	19.0	66	6.5	240.0	32.0	86	35.6	4.2	.7	83	.600
APR	193.810	6.460	13.130		69.0	21.0	69	9.3	220.0	25.0	88	37.7	4.0	.6	85	.659
MAY	111.830	3.607	6.030		79.0	16.0	79	7.0	245.0	21.0	91	25.0	5.0	.5	90	.503
JUN	89.280	2.976	3.710		51.0	16.0	68	3.1	260.0	38.0	85	19.8	5.9	.8	86	.455
JUL	109.640	3.537	6.930		55.0	12.0	78	4.7	177.0	30.0	83	16.1	4.0	.6	85	.373
AUG	96.260	3.438	5.880		50.0	11.0	78	3.7	190.0	22.0	88	16.1	4.6	.6	86	.385
SEP	112.350	3.745	4.680		67.0	15.0	77	5.8	255.0	24.0	90	25.9	6.7	.7	89	.674
OCT	122.390	3.948	6.180		47.5	15.5	67	3.9	206.0	23.5	88	22.3	5.3	.6	88	.575
NOV	143.920	4.800	7.020		31.0	6.5	79	3.5	170.0	17.5	89	21.9	4.6	.5	89	.590
DEC	171.930	5.550	11.310		76.0	12.0	84	11.0	410.0	12.0	97	68.4	6.7	.4	94	1.083
TOTAL	1545.050							71.0				328.2				6.746
AVERAGE		4.233			62.7	16.8	73		233.5	26.6	88		5.0	.6	87	
MAXIMUM			13.130													
NO. OF SAMPLES					23	23			23	23			48	48		

Ministry of the Environment
Ontario

Northeastern Region

⑤

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

Sault Ste. Marie
445 Albert St. E.
705-949-4640

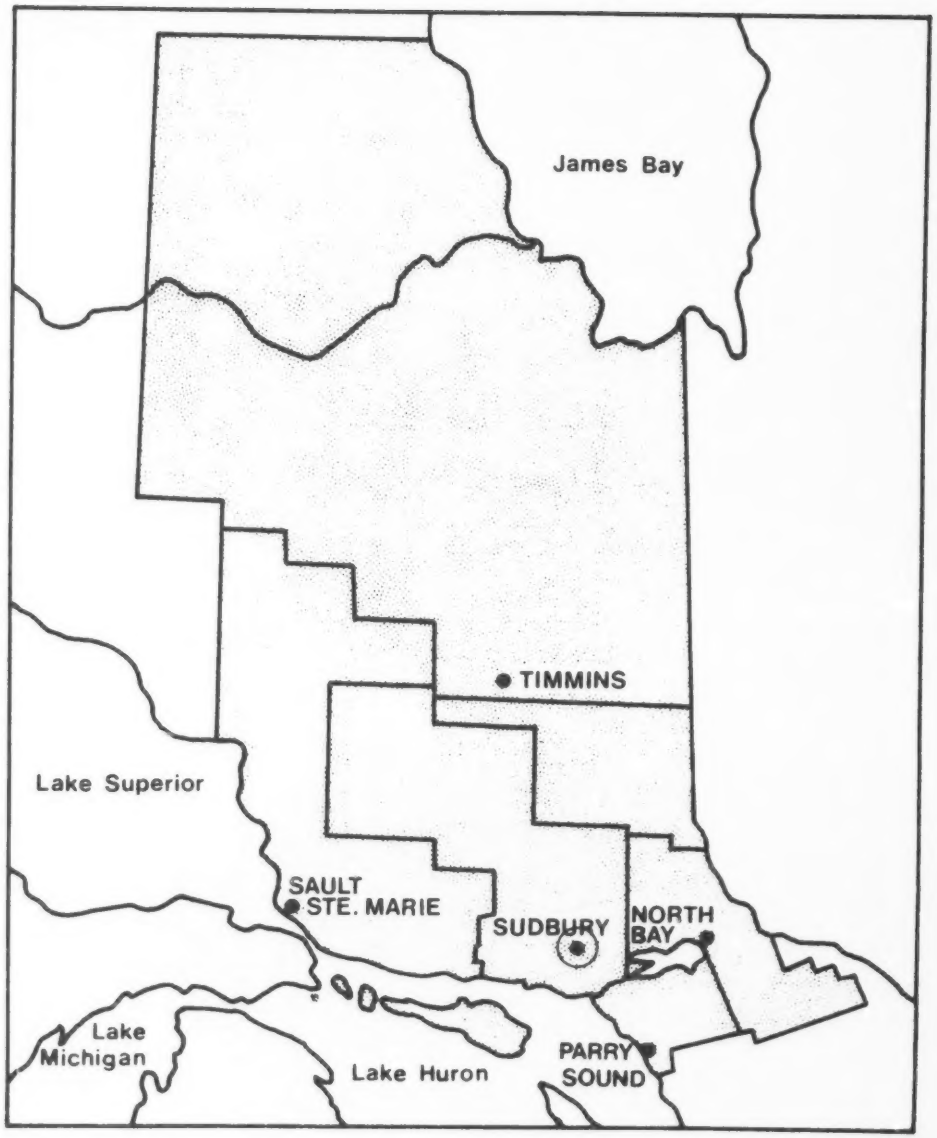
Timmins
83 Algonquin Blvd. W.
705-264-9474

Parry Sound
74 Church St.
705-746-2139

Ministry of the Environment
Ontario

Northeastern Region

⑤



DESIGN DATA - METRIC

ESPANOLA

PROJECT NAME	Town of Espanola WPCP	
PROJECT NO:	2-0074-61	SCREENING
TREATMENT:	Primary	2 manually cleaned bar screens
DESIGN FLOW:	3.000 $10^3 m^3/d$	GRIT REMOVAL

Two channel 4.4m x 4m x .13m
(liq. depth)
Flow Velocity .004m/s

PRIMARY SEDIMENTATION

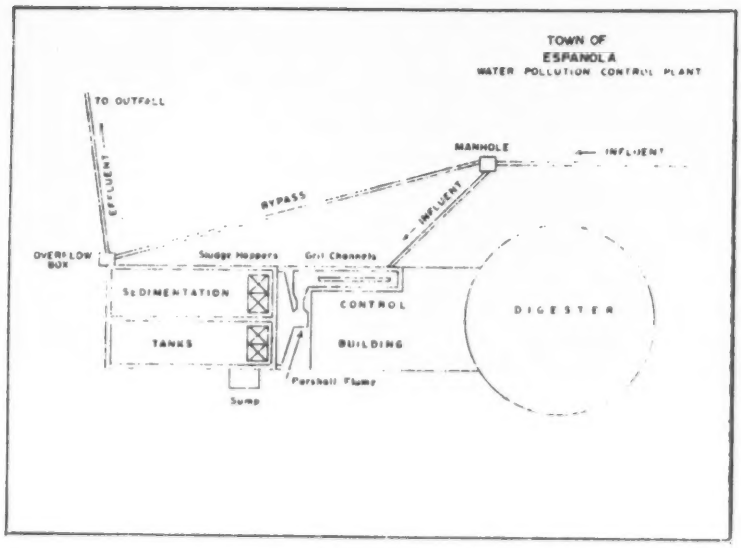
Size: Two 11.0m x 3.7m x 3.0m
Volume: 245 m^3
Detention: 1.95 hours
Loading: Surface 17.8 $m^3/m^2/d$

OUTFALL

Spanish River

SLUDGE DISPOSAL

Single stage digestion, fixed roof
Size: One 10.7m dia. x 5.9m swd
Volume: 529.6m^3



DESIGN DATA - IMPERIAL

PROJECT NAME	Town of Espanola WPCP	
PROJECT NO.	2-0074-61	SCREENING
TREATMENT	Primary	2 manually cleaned bar screens
DESIGN FLOW	0.66 mgd	GRIT REMOVAL

Two channels - 14'6" x 1.5' x 1.07'
(liq. depth)
Flow Velocity - 1.0 fps

PRIMARY SEDIMENTATION

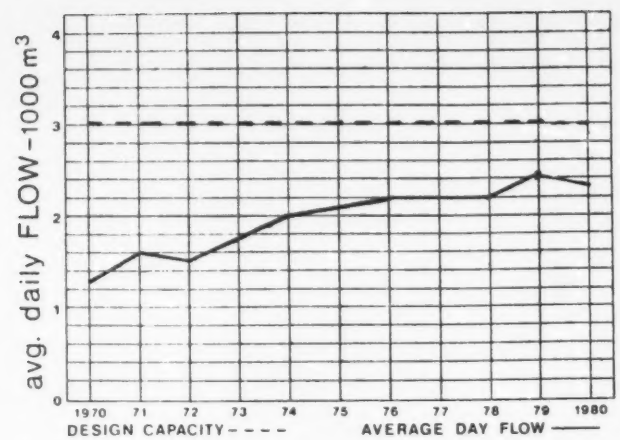
Size: Two 36' x 12' x 10'
Volume: 8840 ft^3 or 54,000 gal.
Detention: 1.95 hours
Loading: Surface 773 gpd/ft^2

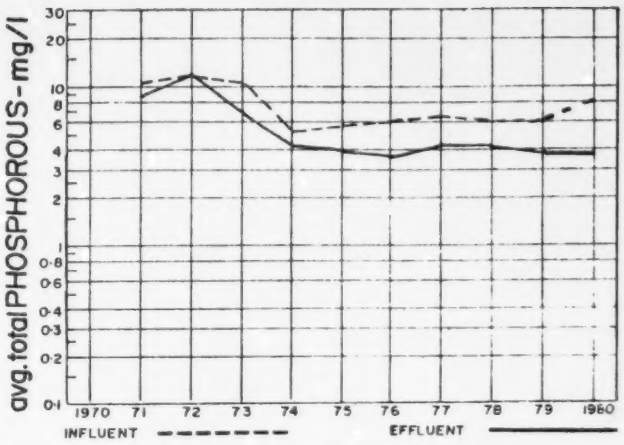
OUTFALL

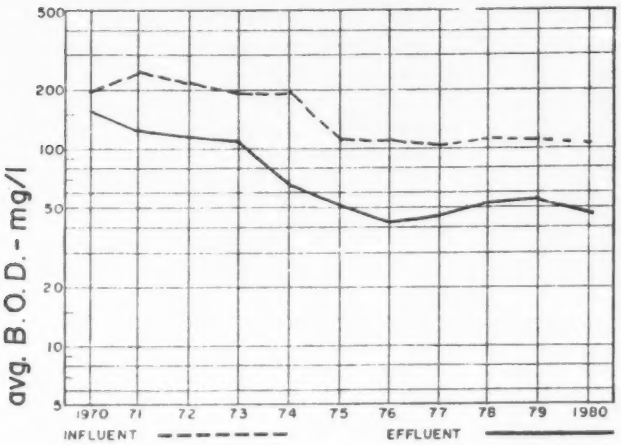
Spanish River

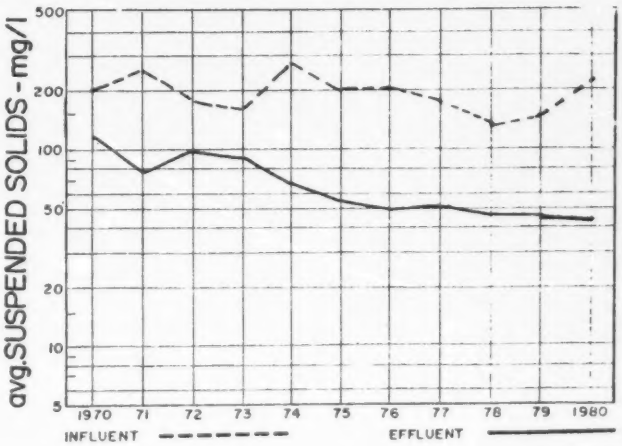
SLUDGE DISPOSAL

Single stage digestion, fixed roof
Size: One 35' dia. x 19.4' swd
Volume: 19,700 ft^3 or 116,000 gal.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000212 ESPANOLA WPCP

MUNICIPALITY : ESPANOLA
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : PRIMARY

CURRENT POPULATION : 5,388
POPULATION SERVED : 5,740
PERCENT SERVED : 106.5

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.000 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	77.518	2.500	4.055		120.0	64.0	46	4.3	147.0	45.0	69	7.9	6.4	4.1	35	.178
FEB	68.298	2.355	2.542		55.0	35.5	35	1.3	165.0	37.5	77	8.7	6.1	3.5	42	.178
MAR	74.778	2.412	4.078		72.5	39.0	46	2.5	140.0	42.5	69	7.2	5.1	3.3	35	.135
APR	67.370	2.245	2.936		80.0	32.0	60	3.2	183.0	68.0	62	7.7	23.0	2.3	90	1.395
MAY	70.569	2.276	2.740		109.0	37.0	66	5.0	140.0	38.0	72	7.1	7.8	4.3	44	.247
JUN	67.837	2.261	2.630		112.0	39.0	65	4.9	218.0	43.0	80	11.8	6.8	3.5	48	.224
JUL	75.737	2.443	2.841		121.0	34.0	71	6.5	310.0	33.0	89	20.9	5.3	3.7	30	.121
AUG	79.863	2.576	3.064		45.0	37.0	17	.6	88.0	48.0	45	3.1	4.0	4.6	-	-
SEP	68.210	2.273	2.840		*	*			*	*			*	*		
OCT	75.378	2.432	2.987		*	*			*	*			*	*		
NOV	64.795	2.160	2.607		175.0	120.0	31	3.5	170.0	50.0	70	7.7	8.0	5.1	36	.188
DEC	70.292	2.267	2.588		200.0	37.0	81	11.4	645.0	45.0	93	42.1	8.7	3.8	56	.344
TOTAL	860.645							43.6				124.8				3.010
AVERAGE		2.350			108.9	47.4	56		220.6	45.0	79		8.1	3.8	52	
MAXIMUM			4.078													
NO. OF SAMPLES					18	19			18	19			18	19		

PARRY SOUND

DESIGN DATA - METRIC

PROJECT: Town of Parry Sound WPCP

PROJECT NO: 2-0113-62

TREATMENT: Primary

DESIGN FLOW: 3.8 $10^3 m^3/d$

DESIGN POPULATION: 7,500

BOD - Raw Sewage 250 mg/l
- Removal 35%

SS - Raw Sewage 200 mg/l
- Removal 35%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C (.46m)

Grit Removal

Type: Dorr Detritor
Size: One 3.05m x 3.05 x .38m
Retention: 1.35 min

Primary Sedimentation

Type: Dorr
Size: Two 9.1m x 9.1m x 3.05m swd
Volume: 608.5m^3
Retention: 3.24 hr
Loading: Surface, 22.4m^3/m^2.d
Weir, 55.1m^3/m.d

CHLORINATION

Type: Wet type A-731
Size: One 90.7kg/day

Chlorine Contact Chamber

Size: one 7.6m x 2.6m x 2.4m
Volume: 50.7m^3
Retention: 19.2 min

OUTFALL

- to McCurry Lake

SLUDGE HANDLING

Digestion System - Single-stage

Type: Dorr draft tubes (2)
Size: One 10.7m dia. x 6.3m swd
Volume: 582.8m^3

PUMPING STATIONS

#1: River Street P.S.
Type: Flygt CP-3100
Size: two 6.31 l/s @ 7.6m TDH

#2: Birch Street P.S.
Type: Flygt Submersible
Size: Two, 15.4 l/s

#3: Hawthorne Cres. P.S.
Type: Flygt CP-3100
Size: One, 3.2 l/s @ 9.4m TDH

#4: William Street P.S.
Type: Flygt CP-3100
Size: 26.5 l/s @ 11m TDH

#5: Cascade Street P.S.
Type: Robert Morse (Weinman)
Size: Two, 13.3 l/s @ 12.5m TDH

#6: Seguin Street P.S.
Type: Fairbanks Morse
Size: Two, 65.6 l/s @ 48.4 TDH

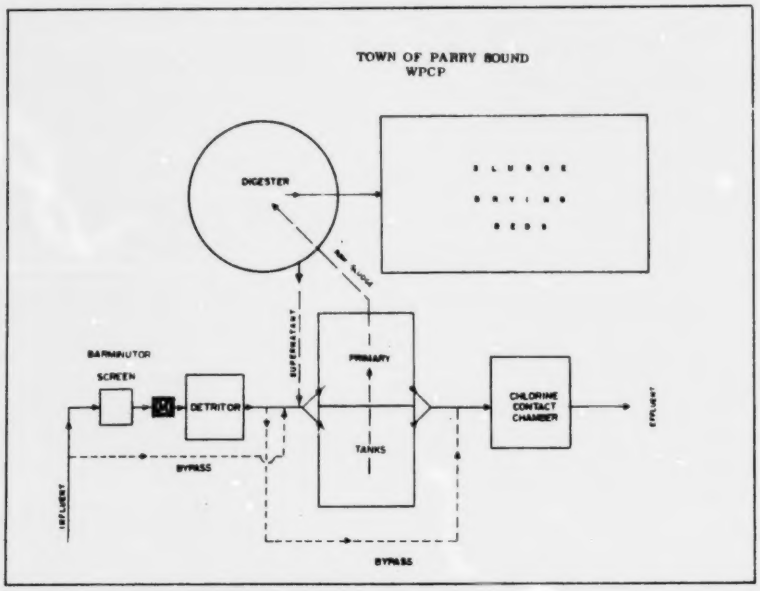
#7: Bay St. P.S.
Type: Flygt CP-3100
Size: One, 21.5 l/s @ 10.7m TDH

#8: St. Charles Crossing P.S.
Type: Smith & Loveless
Ejector Station
Size: One, 3.2 l/s @ 7.6m TDH

#9: Prospect St. P.S.
Type: Submersible
Size: Two, 20.8 l/s

#10: Waubeek St. P.S.
Type: Flygt submersible
Size: Two, 15.1 l/s

#11: Beaver Street P.S.
Type: Flygt submersible
Size: Two, 30.3 l/s



DESIGN DATA - IMPERIAL

PROJECT Town of Parry Sound WPCP

PROJECT NO. 2-0113-62

TREATMENT Primary

DESIGN FLOW 0.83 mgd

DESIGN POPULATION 7,500

BOD - Raw Sewage 250 mg/l
- Removal 35%

SS - Raw Sewage 200 mg/l
- Removal 35%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model C (18")

Grit Removal

Type: Dorr Detritor
Size: One 10 X 10 X 1½'
Retention: 1.35 min

Primary Sedimentation

Type: Dorr
Size: Two 30' x 30' x 10' swd
(112,000 gallons)
Retention: 3.24 hr
Loading: Surface, 460 gal/ft^2/day
Weir, 3700 gal/ft/day

CHLORINATION

Type: W & T, Type A-731
Size: One 200 lb/day

Chlorine Contact Chamber

Size: One 25½ X 8½ X 8'
(11,150 gal)
Retention: 19.2 min

OUTFALL

- to McCurry Lake

SLUDGE HANDLING

Digestion System - single-stage

Type: Dorr draft tubes (2)
Size: One 35' dia x 20' 9" swd
(20,580 cu ft or 138,000 gal)

PUMPING STATIONS

#1: River Street P.S.
Type: Flygt CP-3100
Size: Two 100, usgpm at 25'tdh

#2: Birch Street P.S.
Type: Flygt submersible
Size: Two, 200 gpm

#3: Hawthorne Cres. P.S.
Type: Flygt CP-3100
Size: One, 60 usgpm at 31' tdh

#4: William Street P.S.
Type: Flygt CP-3100
Size: Two, 420 usgpm at 36' tdh

#5: Cascade Street P.S.
Type: Robert Morse (Weinman)
Size: Two, 210 usgpm at 41' tdh

#6: Seguin Street P.S.
Type: Fairbanks Morse
Size: Two, 1040 usgpm at 160' tdh

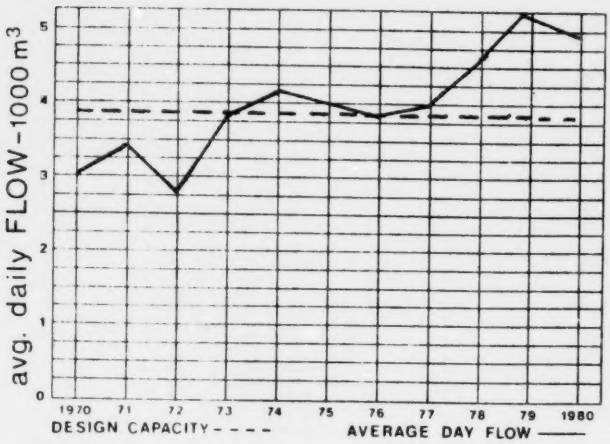
#7: Bay Street P.S.
Type: Flygt CP-3100
Size: One, 340 usgpm at 35' tdh

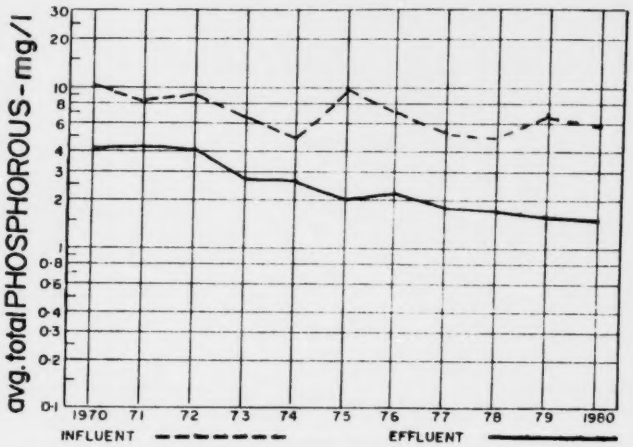
#8: St. Charles Crossing P.S.
Type: Smith & Loveless
Ejector Station
Size: One, 50 usgpm at 25' tdh

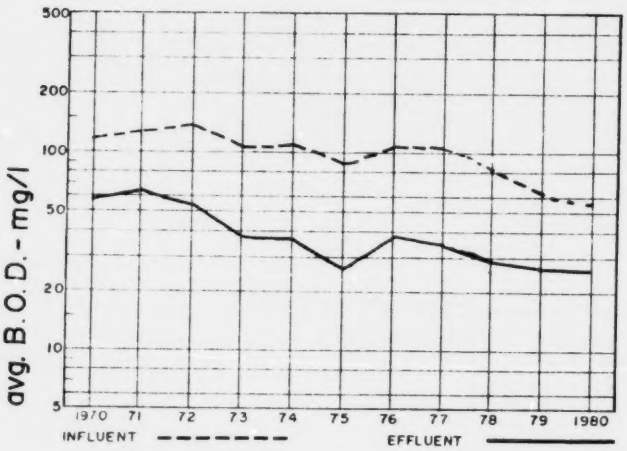
#9: Prospect St. P.S.
Type: Submersible
Size: Two, 275 gpm

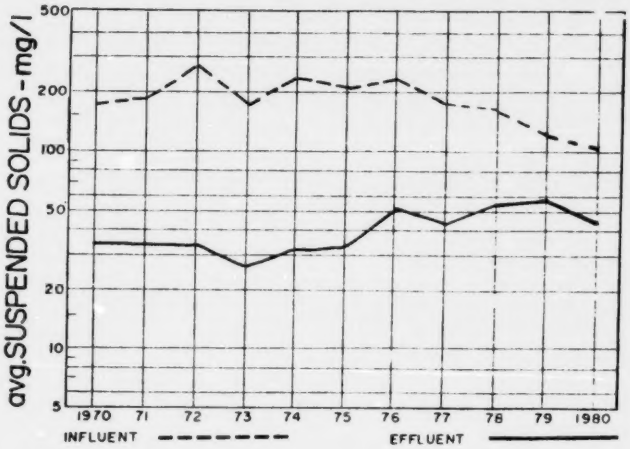
#10: Waubeek St. P.S.
Type: Flygt submersible
Size: Two, 200 gpm

#11: Beaver Street P.S.
Type: Flygt submersible
Size: Two, 400 gpm









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000560 PARRY SOUND MPCP

MUNICIPALITY : PARRY SOUND
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 5,248
POPULATION SERVED : 5,500
PERCENT SERVED : 104.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.273 1000 M3 DESIGN BOD5 : 250.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	155.010	5.000	8.550	12.700	62.0	30.0	51	4.9	96.0	42.0	56	8.3	6.4	1.5	76	.764
FEB	105.420	3.640	3.970	6.000	125.0	36.0	71	9.3	104.2	47.8	54	5.9	6.5	1.8	71	.491
MAR	173.790	5.610	8.390	13.600	64.0	43.0	32	3.6	176.0	65.0	63	19.2	5.3	1.7	68	.638
APR	215.330	7.180	8.480	13.600	28.0	27.0	3	.2	63.2	47.5	24	3.3	6.9	1.7	75	1.120
MAY	153.000	4.940	5.840	12.600	40.0	23.0	42	2.6	85.0	36.3	57	7.4	6.6	1.3	79	.806
JUN	169.560	5.650	9.410	13.600	73.5	35.0	52	6.5	106.0	63.9	39	7.1	5.5	1.7	69	.644
JUL	154.070	4.970	5.950	13.600	20.0	14.0	30	.9	66.0	43.0	34	3.5	3.7	2.0	45	.262
AUG	123.980	4.000	4.950	13.600	78.5	18.0	77	7.5	124.5	64.8	47	7.4	6.7	1.6	76	.632
SEP	126.120	4.200	6.670	12.900	48.0	16.0	66	4.0	115.0	46.8	59	8.6	8.5	1.6	81	.870
OCT	143.840	4.640	7.520	12.700	30.0	14.8	50	2.1	84.8	40.8	51	6.3	5.8	1.1	81	.676
NOV	134.920	4.500	5.230	13.000	84.0	58.0	30	3.5	127.0	38.0	70	12.0	5.8	1.6	72	.569
DEC	138.430	4.470	8.700	13.600	44.0	20.0	54	3.3	126.0	32.2	74	12.9	6.0	1.5	75	.623
TOTAL	1793.470							48.8				102.4				8.095
AVERAGE		4.900			58.0	27.9	51		106.1	47.3	55		6.1	1.6	73	
MAXIMUM			9.410	13.600												
NO. OF SAMPLES																

DESIGN DATA - METRIC

SAULT STE. MARIE

PROJECT: City of Sault Ste Marie WPCP

PROJECT NO.: 2-0020-58

TREATMENT: Primary

DESIGN FLOW: 54.552 $10^3 m^3/d$

PRIMARY TREATMENT

COMMINUTION
Type: Six barminutors Model C
Size: 914.4mm

GRIT REMOVAL
Type: Detritors
Size: Two, each 5.49m x 5.49m x .38m swd
One, 7.32m x 7.32m x 1.22m swd
Volume (total): 88.19m^3
Retention: 3.4 min.

PRIMARY SEDIMENTATION
Size: Four, each 21.34m dia. x 2.44m swd
Two, each 24.38m dia. x 2.44m swd
Volume (total) 5.778 $10^3 m^3/d$
Retention: 3.8 hr.

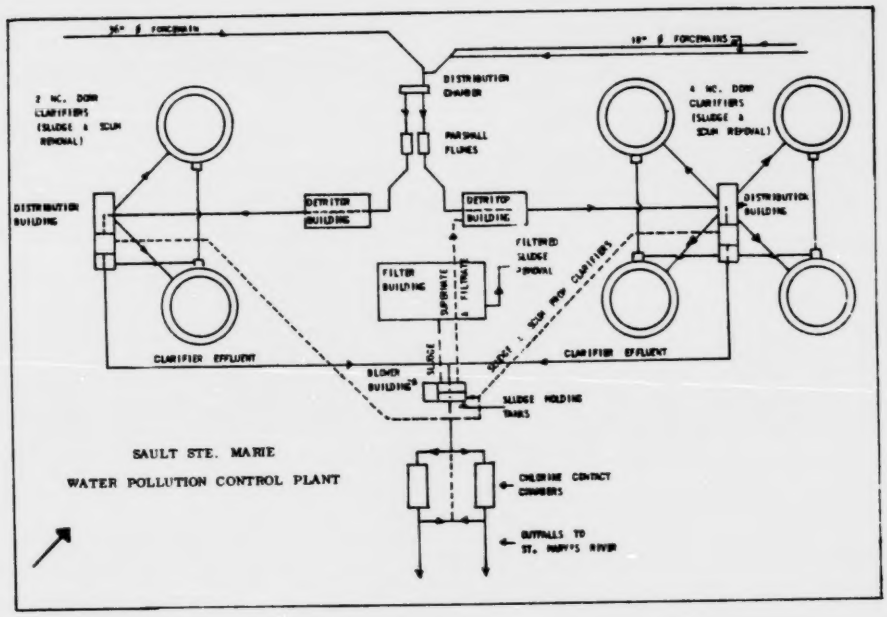
CHLORINATION
Type: Wallace and Tiernan
Size: One, 680.4 kg/day
One, 22.7 kg/day

CHLORINE CONTACT CHAMBER
Size: One, 18.29m x 6.10m x 3.66m
One, 22.86m x 13.72m x 5.03m
Volume (total): 2804.9 m^3
Retention: 1.9 min

SLUDGE HANDLING

HOLDING TANKS
Size: Two, each 7.32m x 4.57m x 3.51m
Volume (total): 235.028m^3

VACUUM FILTER
Type: Two, each, 18.58 m^2 area



DESIGN DATA - IMPERIAL

PROJECT: City of Sault Ste Marie WPCP

PROJECT NO. 2-0020-58

TREATMENT: Primary

DESIGN FLOW: 12 mgd

DOD - 375 mg/l

SS - 300 mg/l

PRIMARY TREATMENT

COMMINUTION
Type: Six barminutors Model C
Size: 36"

GRIT REMOVAL
Type: Detritors
Size: Two, each 18' x 18' x 1.25' swd
One, 24 x 24' x 4 swd
Volume (total): 19,400 gal
Retention: 3.4 min

PRIMARY SEDIMENTATION
Size: Four, each 70' dia x 8' swd
Two, each 80' dia x 8' swd
Volume (total): 1.271 M.G.
Retention: 3.8 hr

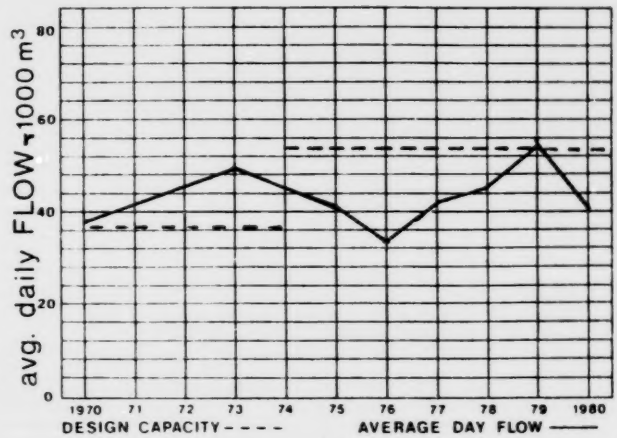
CHLORINATION
Type: Wallace and Tiernan
Size: One, 1500 lb/day
One, 500 lb/day

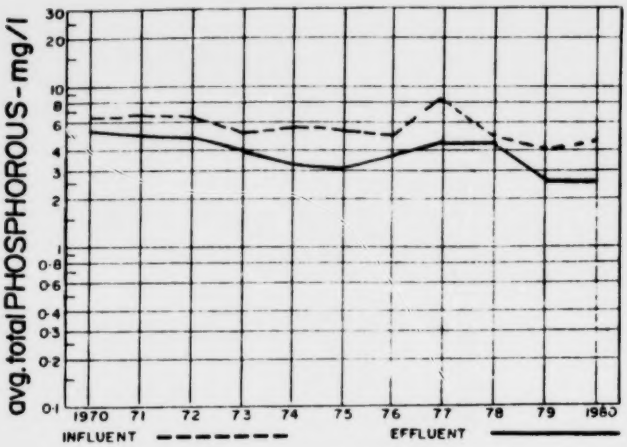
CHLORINE CONTACT CHAMBER
Size: One, 60' x 20' x 12'
One, 75' x 45' x 16.5'
Volume (total): 617,000 I.Gal
Retention: 1.9 min

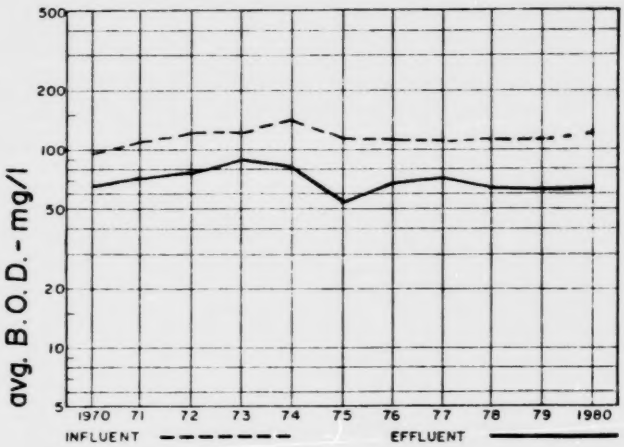
SLUDGE HANDLING

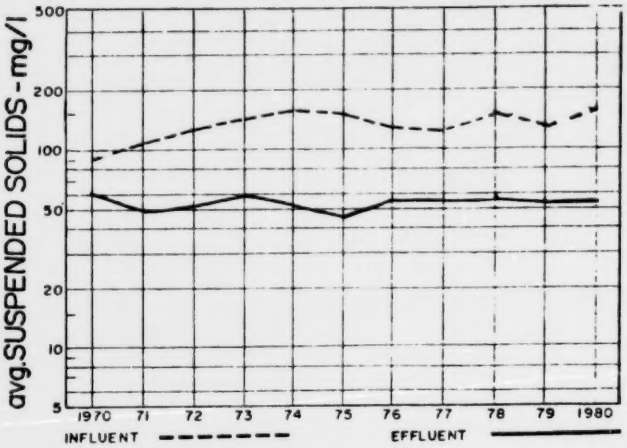
HOLDING TANKS
Size: Two, each 24' x 15' x 11.5'
Volume (total): 51,700 I.Gal

VACUUM FILTER
Type: Two, each 200 ft^2 area









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000640 SAULT STE.MARIE MPCP

MUNICIPALITY : SAULT STE MARIE
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : PRIMARY
PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 80,524
POPULATION SERVED : 72,000
PERCENT SERVED : 89.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 54.552 1000 M3 DESIGN BOD5 : 375.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	1320.500	42.580	81.000	118.000	133.0	62.0	53	93.7	146.0	48.0	67	129.4	8.2	4.0	51	5.546
FEB	997.600	34.390	36.700	60.300	124.0	67.0	45	56.8	161.0	53.0	67	107.7	*	*		
MAR	1288.800	41.570	74.600	100.000	138.0	74.0	46	82.4	159.0	50.0	68	140.4	*	*		
APR	2032.400	67.740	151.200	154.600	107.2	41.2	61	134.1	130.0	42.0	67	178.8	4.2	2.8	33	2.845
MAY	1229.700	39.700	46.700	70.400	104.6	59.0	43	56.0	189.4	54.4	71	166.0	5.6	1.2	76	5.300
JUN	1285.700	42.850	82.100		141.0	58.0	58	106.7	161.0	53.0	67	138.8	4.5	3.4	24	1.414
JUL	1120.200	36.120	43.900		115.0	57.0	50	64.9	163.0	58.0	64	117.6	4.3	3.1	27	1.344
AUG	1085.700	35.010	53.700	120.300	119.0	60.0	49	64.0	162.0	48.0	70	123.7	2.3	3.2	-	-
SEP	1166.200	38.900	53.400	115.800	159.0	65.0	59	109.6	126.0	54.0	57	83.9	6.8	2.7	60	4.781
OCT	1331.100	42.930	66.800	109.000	176.0	70.0	60	141.0	168.0	62.0	63	141.0	5.9	3.3	44	3.461
NOV	1348.140	45.300	64.400		137.0	69.0	49	91.6	159.0	61.0	61	132.1	3.4	2.6	23	1.079
DEC	1202.000	38.800	50.200	81.700	144.0	74.0	48	84.1	159.0	55.0	65	125.0	4.7	3.5	25	1.442
TOTAL	15408.040							1085.5				1584.9				27.212
AVERAGE		42.158			133.1	63.0	52		156.9	53.2	66		4.9	2.9	40	
MAXIMUM			151.200	154.600												
NO. OF SAMPLES					59	59			108	108			8	10		

Ministry of the Environment
Ontario

Northwestern Region

⑥

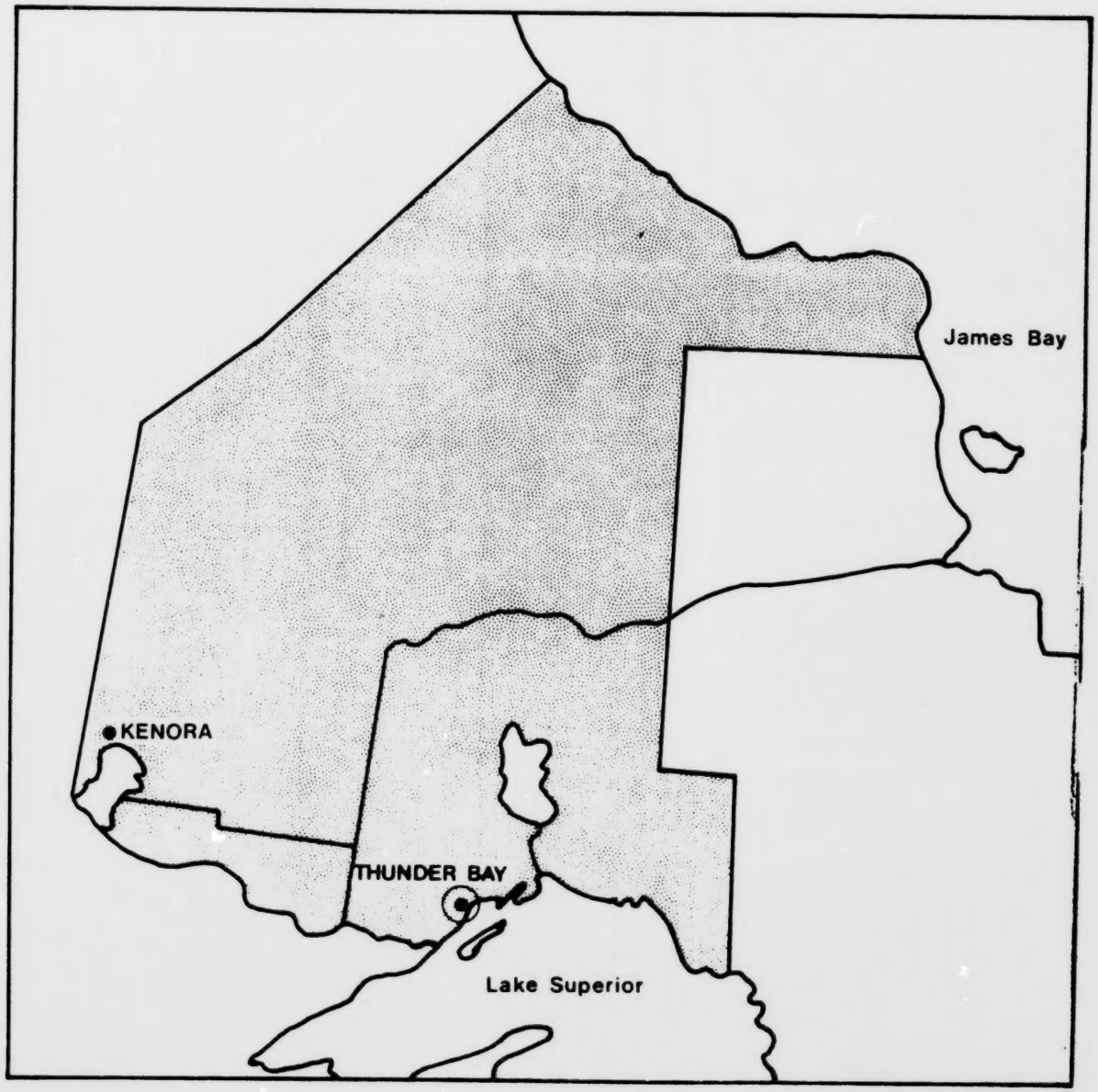
REGIONAL OFFICE
THUNDER BAY
435 James St. S.
P.O. Box 5000
807-475-1205

DISTRICT OFFICE
Kenora
808 Robertson St.
807-468-5578

Ministry
of the
Environment
Ontario

Northwestern Region

⑥



DESIGN DATA - METRIC

FORT FRANCES

PROJECT Town of Fort Frances WPCP

PROJECT NO. 2-0059-60

TREATMENT Primary

DESIGN FLOW 9.1 $10^3 m^3/d$

DESIGN POPULATION 12,000

BOD - Raw Sewage 130 mg/l
- Removal 40%

SS - Raw Sewage 180 mg/l
- Removal 60%

PRIMARY TREATMENT

Screening

- Coarse bar screen (50.8mm)

Comminution

Type: Smith & Loveless Model 15R

Grit Removal

Type: Aerated; grit removed by clamshell bucket
Size: One 3.2m x 3.2m x4.2m swd
Volume: 42.9 m^3
Retention: 6.8 min

Air Supply

Type: Roots-Connersville
Size: One 83.6 l/s @ 62.1 kPa

Primary Sedimentation

Type: Eimco Process
Size: Two 12.2m x 12.2m x 3.0m swd
Volume: 906.2 m^3
Retention: 2.4 hours

Loading: Surface, 30.6 $m^3/m^2.d$
Weir, 143.9 $m^3/m.d$

CHLORINATION

Type: W & T Model A-731
Size: 181.4 kg/d

Chlorine Contact Chamber

Size: 8.23m x 6.1m x 2.6m
Volume: 130m^3
Retention: 20.6 min

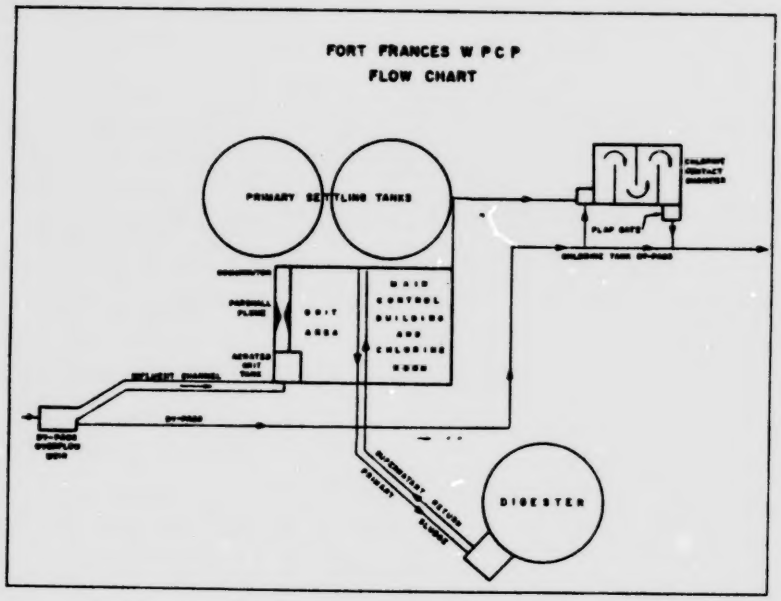
OUTFALL

- to Rainy River

SLUDGE HANDLING

Digestion System

Type: Single stage with floating cover; gas mixed
Size: One 12.2m x 7.6m swd (892.1m^3)
Loading: 22.6 kg/m^3/MO
Mixer: Roots-Connersville Type XA



DESIGN DATA - IMPERIAL

PROJECT Town of Fort Frances WPCP

PROJECT NO.	2-0059-60	
TREATMENT	Primary	
DESIGN FLOW	2.0 mgd	
DESIGN POPULATION	12,000	
BOD - Raw Sewage	130 mg/l	
- Removal	40%	
SS - Raw Sewage	180 mg/l	
- Removal	60%	

PRIMARY TREATMENT

Screening

- Coarse bar screen (2")

Comminution

Type: Smith & Loveless Model 15R

Grit Removal

Type: Aerated, grit removed by clamshell bucket
Size: One 10' 5" x 10' 5" x 13' 9" swd (151.5 cu ft or 9,400 gal)
Retention: 6.8 min

Air Supply

Type: Roots-Connersville
Size: One 100 scfm @ 9 psi

Primary Sedimentation

Type: Eimco Process
Size: Two 40' x 40' x 10' swd (32,000 cu ft or 200,000 gal)
Retention: 2.4 hours

Loading: [illegible] gal/ft²/day
Weir, 9,[illegible] gal/ft/day

CHLORINATION

Type: W & T Model A-731
Size: 400 lb/day

Chlorine Contact Chamber

Size: 27' x 20' x 8.5' (avg)
(4,590 cu ft or 28,600 gal)
Retention: 20.6 min

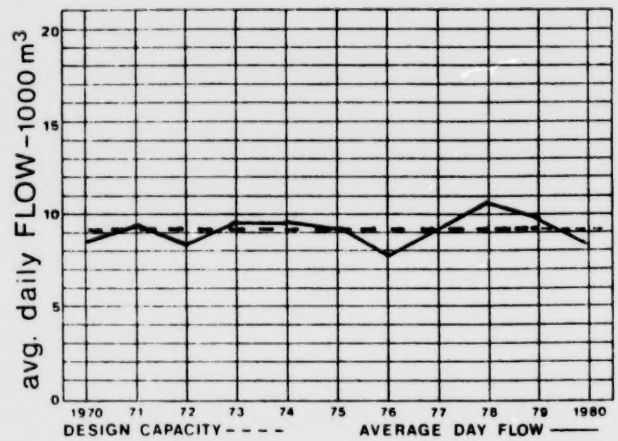
OUTFALL

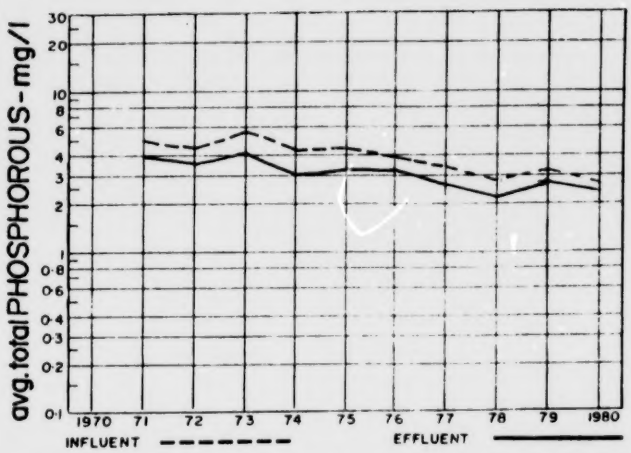
- to Rainy River

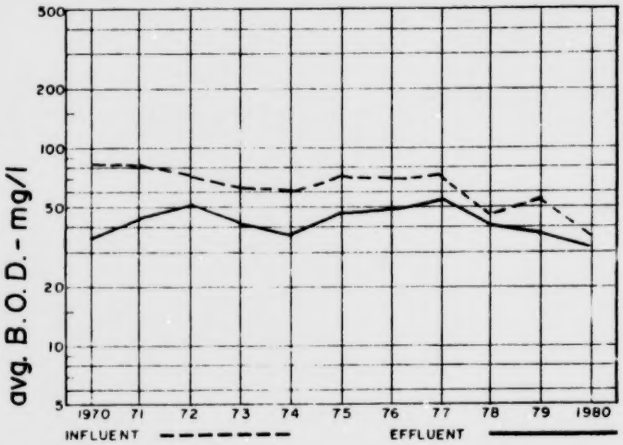
SLUDGE HANDLING

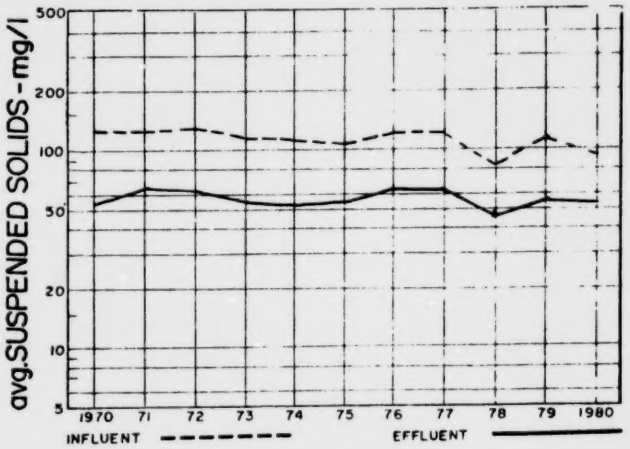
Digestion System

Type: Single stage with floating cover, gas mixed
Size: One 40' dia x 25' swd (31,400 cu ft or 195,500 gal)
Loading: 1.38 lb/cu ft mo
Mixer: Roots-Connersville Type XA









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000258 FORT FRANCES MPCP

MUNICIPALITY : FORT FRANCES
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : PRIMARY

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 9,088
POPULATION SERVED : 8,800
PERCENT SERVED : 96.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 9.092 1000 M3 DESIGN BOD5 : 130.0 MG/L DESIGN SUSP.SOLIDS : 180.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	262.304	8.455	9.092	10.456	35.0	17.0	51	4.7	101.6	41.4	59	15.7	2.5	1.5	40	.262
FEB	236.392	8.151	10.001	10.910	48.0	38.0	20	2.3	84.0	38.5	54	10.7	3.3	2.6	21	.165
MAR	262.200	8.458	10.100	10.800	50.0	46.0	8	1.0	80.0	60.0	25	5.2	3.0	3.2	-	-
APR	271.800	9.060	10.200	11.300	40.0	*			90.0	*			2.9	*		
MAY	272.400	8.700	10.200	12.200	25.0	*			100.0	*			2.5	*		
JUN	243.100	8.103	11.100	11.100	52.3	32.6	37	4.7	105.0	60.0	42	10.9	3.5	3.1	10	.089
JUL	255.800	8.251	10.500	14.000	42.0	39.0	7	.7	110.5	49.2	55	15.6	2.8	2.3	17	.128
AUG	255.800	8.251	10.000	13.100	26.6	34.0	-	-	140.6	63.3	54	19.7	3.6	2.7	25	.230
SEP	267.600	8.920	13.100		26.0	12.0	53	3.7	103.0	43.5	57	15.9	2.4	1.2	50	.321
OCT	251.100	8.100	10.000		42.3	36.6	13	1.4	86.6	66.6	23	5.0	3.3	3.1	6	.050
NOV	248.900	8.300	10.500	11.300	32.5	35.0	-	-	70.0	60.0	14	2.4	2.9	2.7	6	.050
DEC	241.100	7.770	8.300		30.0	33.0	-	-	80.0	50.0	37	7.2	2.4	2.6	-	-
TOTAL	3068.496							18.8				108.8				1.295
AVERAGE		8.377			37.4	32.3	13		95.9	53.2	44		2.9	2.5	14	
MAXIMUM			13.100	14.000												
NO. OF SAMPLES					24	20			34	30			23	19		

CONVENTIONAL ACTIVATED SLUDGE PLANTS

Ministry of the Environment
Ontario

Southwestern Region

①

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

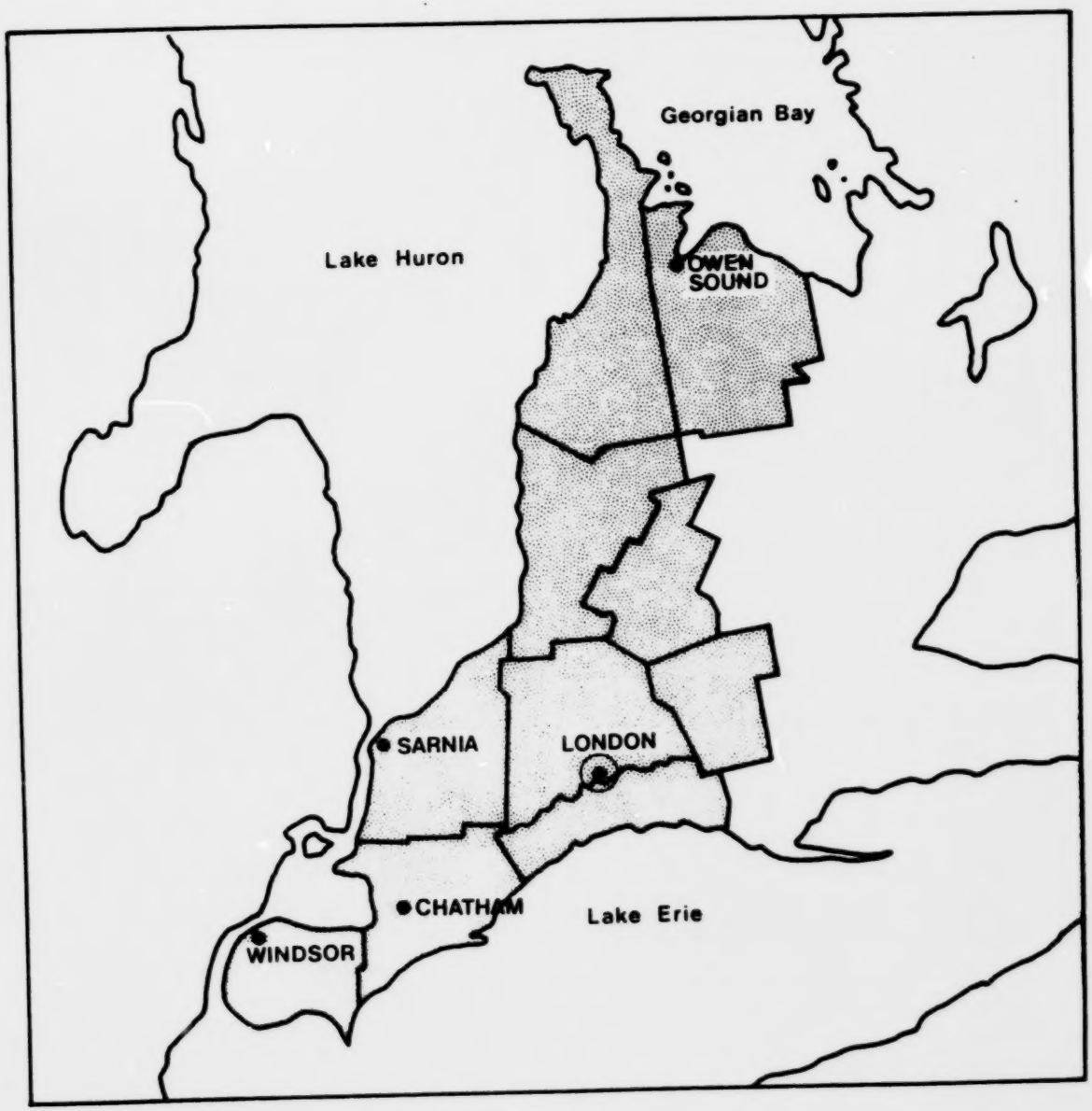
Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Ministry of the Environment
Ontario

Southwestern Region

①



DESIGN DATA - METRIC

INGERSOLL

PROJECT: Town of Ingersoll WPCP
PROJECT NO: 1-0076-67
TREATMENT: Conventional Activated Sludge
DESIGN FLOW: 10.26 $10^3 m^3/d$
(Old Plant 3.41 $10^3 m^3/d$)
New plant 6.82 $10^3 m^3/d$
BOD: Raw sewage 200 mg/l
SS: Raw sewage 200 mg/l

PRETREATMENT (Common)

BAR SCREENS:

Manually cleaned, in wet well influent channel

RAW SEWAGE PUMPING
Two, size 70.67 l/s - variable-speed
Two, size 141.34 l/s - variable speed

COMMINUTION:

One comminutor, Capacity 30.69 $10^3 m^3$

GRIT REMOVAL:

Aerated grit tank
Size: 3.6m x 4.3m x 3.5m swd
Volume 47.67 m^3 Detention: 1.8 min.

OLD PLANT

PRIMARY SEDIMENTATION:

Two, each 3.7m x 12.2m x 3.05m swd (avg)
Volume: 272.76 m^3 Detention: 1.9 hours
Overflow rate: 38.1 $m^3/m^2 \cdot d$

AERATION TANKS

Two, each 9.1m x 16.5m x 4.6m swd (avg)
Volume: 1363.80 m^3 Detention: 9.7 hours
Fine bubble diffusion
Blowers: Two, size each 319.3 l/s at 51.7 kPa

SECONDARY SEDIMENTATION:

Two, 4.6m x 13.1m x 3.7m swd (avg)
Volume: 454.6 m^3 Detention: 3.2 hours
Overflow rate: 26.89 $m^3/m^2 \cdot d$

CHLORINE CONTRACT CHAMBER:

Size: 5.5m x 3.1m x 3.4m swd
Volume: 59.10 $10^3 m^3$ Detention: 25 min

SLUDGE HOLDING TANK:
Size: 3.4m x 7.6m x 3.8m swd
Volume: 100.01 m^3

NEW PLANT

PRIMARY SEDIMENTATION:

Two, 4.9m x 19.8m x 3.4m swd (avg)
Volume: 645.53 $10^3 m^3$
Detention 2.3 hours
Overflow rate: 35.2 $m^3/m^2 \cdot d$

AERATION TANKS

Two, each with two cells 9.1 m square x 4.0m swd
Volume: 1227.42 m^3
Detention: 4.3 hours

SECONDARY SEDIMENTATION:

Two, each 14.9m x 23.8m x 3.7m swd
Volume: 850.10 m^3
Detention: 3 hours
Overflow rate: 29.33 $m^3/m^2 \cdot d$

CHLORINE CONTACT CHAMBER:

Size: 8.1m x 7.3m x 3.1m swd
Volume: 18.64 m^3
Detention: 35 min.

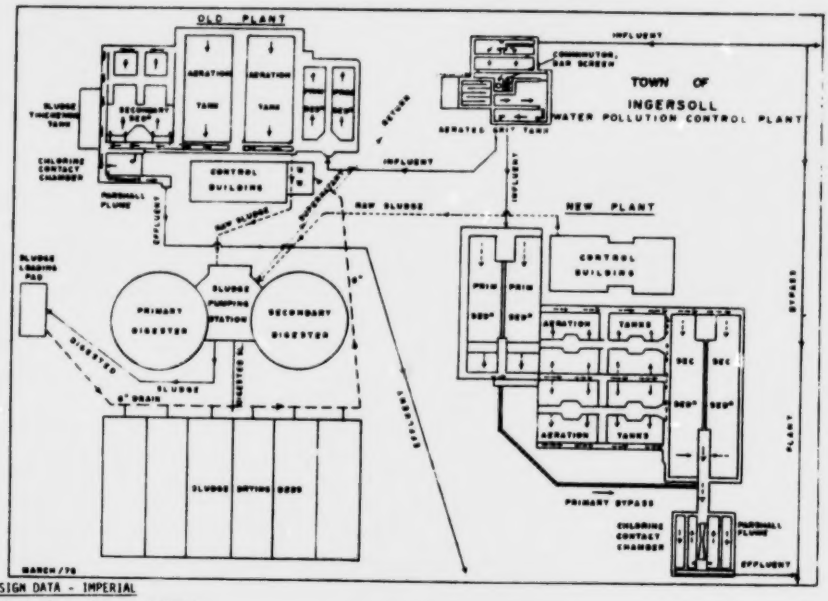
SLUDGE HANDLING (Common)

PRIMARY DIGESTER:

Size 13.7m dia. x 6.5m swd
Volume: 1019.52 m^3

SECONDARY DIGESTER:
Size: 13.7m dia x 7.6 m
Volume: 177.29 m^3

SLUDGE DRYING BEDS:
Size: six, each 6.1m x 22.9m
Area: 836.1 m^2



DESIGN DATA - IMPERIAL

Project Town of Ingersoll WPCP
Project No: 1-0076-67
Treatment: Conventional Activated Sludge
Design Flow: 2.25 MGD
(Old Plant 0.75 MGD -
New plant 1.5 MGD)
BOD: Raw sewage 200 mg/l
SS: Raw sewage 200 mg/l

PRETREATMENT (Common)

BAR SCREENS:
Manually cleaned, in wet well influent channel

RAW SEWAGE PUMPING:
Two, size 1120 USGPM - variable-speed
Two, size 2240 USGPM - variable speed

COMMINUTION:
One comminutor, Capacity 6.75 MGD

GRIT REMOVAL:
Aerated grit tank
Size: 11'6" x 14' x 10' swd
Volume: 10500 I. Gal. Detention: 1.8 min.

OLD PLANT

PRIMARY SEDIMENTATION:
Two, each 12' x 40' x 10' swd (avg)
Volume: 60,000 I. Gal. Detention: 1.9 hours
Overflow rate: 780 I. Gal/day/sq. ft.

AERATION TANKS:
Two, each 30' x 54' x 15' swd (avg)
Volume: 300,000 I. Gal. Detention: 9.7 hours
Fine bubble diffusion
Blowers: Two, size: each 764 cfm at 7.5 psi

SECONDARY SEDIMENTATION:
Two, 15' x 45' x 12' swd (avg)
Volume: 100,000 I. Gal. Detention: 3.2 hours
Overflow rate: 550 gal/day/sq. ft.

CHLORINE CONTACT CHAMBER:
Size: 16' x 12' x 11' swd
Volume: 13,000 I. Gal. Detention: 25 min.

SLUDGE HOLDING TANK:
Size - 11' x 25' x 12'6" swd
Volume: 22,000 I. Gal

NEW PLANT

PRIMARY SEDIMENTATION:

Two, 16' x 65' x 11' swd (avg)
Volume: 142,000 I. Gal.
Detention: 2.3 hours
Overflow rate: 720 I. gal/ft^2/day

AERATION TANKS:
Two, each with two cells 30' square x 13' swd
Volume: 270,000 I. Gal.
Detention: 4.3 hours

SECONDARY SEDIMENTATION:
Two, each 16' x 76' x 12' swd
Volume: 187,000 I. Gal.
Detention: 3 hours
Overflow rate: 600 I. Gal/ft^2/day

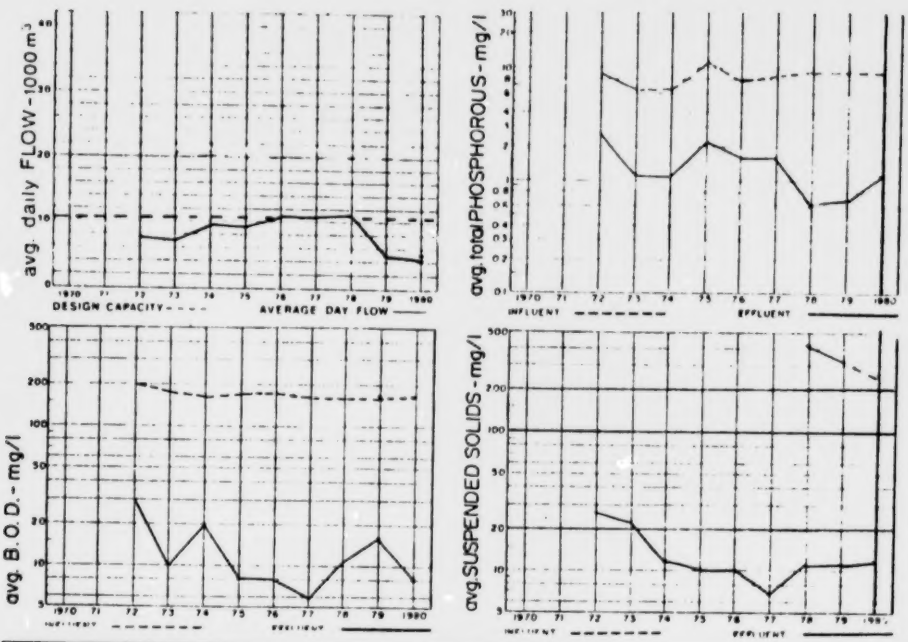
CHLORINE CONTACT CHAMBER:
Size: 26'6" x 24' x 10'3" swd
Volume: 41000 I. Gal.
Detention: 35 min

SLUDGE HANDLING (Common)

PRIMARY DIGESTER:
Size 45' dia. x 21'3" swd
Volume: 38,000 ft^3.

SECONDARY DIGESTER:
Size: 45' dia. x 25'
Volume: 39,000 ft^3

SLUDGE DRYING BEDS:
Six, each 20' x 75'
Area: 9000 ft^2



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110003978 INGERSOLL PLANT A 110000356

MUNICIPALITY : INGERSOLL (PLANT A)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

* FLOW ESTIMATED - METER OUT OF ORDER

CURRENT POPULATION : 8,252
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.409 1000 M3 DESIGN BOD : MG/L DESIGN SUSP.SOLIDS : MG/L

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	BOD INFLUENT MG/L	BOD EFFLUENT MG/L	BOD %	BOD REDUCTION 1000 KG	SUSP. SOLIDS INFLUENT MG/L	SUSP. SOLIDS EFFLUENT MG/L	SUSP. SOLIDS %	SUSP. SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	31.216	1.007		4.432	145.0	18.2	87	3.9	99.0	36.0	63	1.9	6.8	.4	93	.198
FEB	20.608	.711	.900	2.860	122.0	5.6	95	2.3	252.0	16.0	93	4.8	7.0	.3	96	.137
MAR	28.172	.909	1.754	3.182	121.0	19.0	84	2.8	125.0	33.0	73	2.5	8.8	.4	95	.236
APR	34.560	1.152	1.648	3.898	114.0	10.0	91	3.5	186.0	1.8	99	6.3	6.6	.5	92	.211
MAY	42.750	1.379	2.850	4.091	135.0	5.0	96	5.5	213.0	10.0	95	8.6	19.3	.7	96	.794
JUN	35.047	1.168			295.0	5.2	98	10.1	313.0	1.9	99	10.9	8.2	2.2	72	.207
JUL	48.908	1.578	3.450	3.614	198.0	9.1	94	7.3	235.1	12.3	94	10.8	7.1	1.5	78	.274
AUG	44.738	1.508	1.793	3.614	253.0	4.0	98	11.6	470.0	7.2	98	21.6	8.5	2.2	73	.292
SEP	53.242	1.775	1.962	4.636	220.0	3.0	98	11.5	295.5	5.0	98	15.4	8.5	1.9	82	.372
OCT	45.615	1.471	1.875	4.295	142.0	3.9	97	6.2	293.0	2.9	99	13.2	7.7	1.9	79	.279
NOV	54.270	1.809			230.0	4.6	98	12.2	370.7	4.0	98	19.9	9.4	2.3	75	.385
DEC	45.615	1.465		3.069	160.0	7.7	95	6.9	180.3	5.6	96	7.9	7.3	1.8	75	.250
TOTAL	486.541							84.4				124.6				3.635
AVERAGE		1.328			174.5	7.9	95		252.7	11.3	95		8.7	1.3	85	
MAXIMUM			3.450	4.636												
NO. OF SAMPLES					25	25			25	25			25	25		

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110003969 INGERSOLL PLANT B 110000356

MUNICIPALITY : INGERSOLL (PLANT B)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

*FLOW ESTIMATED - METER OUT OF ORDER

CURRENT POPULATION : 8,252
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 6.819 1000 M3 DESIGN BOD : * MG/L DESIGN SUSP.SOLIDS : MG/L

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	BOD INFLUENT MG/L	BOD EFFLUENT MG/L	BOD %	BOD REDUCTION 1000 KG	SUSP. SOLIDS INFLUENT MG/L	SUSP. SOLIDS EFFLUENT MG/L	SUSP. SOLIDS %	SUSP. SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	102.545	3.308		14.700	145.0	14.6	89	13.3	99.0	29.0	70	7.1	6.8	.7	88	.619
FEB	79.256	2.595	3.259	15.300	122.0	18.0	85	7.8	252.0	52.0	79	15.0	7.0	1.7	75	.396
MAR	98.278	3.170	5.352	15.700	121.0	11.2	90	10.7	125.0	35.0	72	8.8	8.8	.3	96	.835
APR	120.169	4.006	5.939	19.800	114.0	10.2	91	12.4	186.0	1.8	99	22.1	6.6	.3	95	.755
MAY	101.487	3.274	4.500		135.0	6.4	95	13.0	213.0	8.5	96	20.7	19.3	.9	95	1.861
JUN	92.241	3.075			295.0	4.6	98	26.7	313.0	8.0	97	28.1	8.2	1.9	76	.578
JUL	101.110	3.262	6.410	50.900	198.0	6.1	96	19.3	235.1	6.4	97	23.1	7.1	1.2	83	.595
AUG	93.819	3.026	3.549		253.0	4.8	98	23.2	470.8	3.9	99	43.7	8.5	1.9	83	.654
SEP	106.675	3.556	3.924		220.0	3.8	98	23.0	295.5	5.1	98	30.9	8.9	1.2	85	.779
OCT	116.970	3.773	9.003		142.0	6.6	95	15.8	293.0	2.9	99	33.9	7.7	1.7	77	.697
NOV	109.960	3.665			230.0	4.8	97	24.7	370.7	5.9	98	40.1	9.4	1.5	84	.869
DEC	90.968	2.934	3.160	9.673	160.0	7.1	98	13.9	180.3	4.0	97	16.0	7.3	2.0	73	.482
TOTAL	1209.471							200.5				298.0				9.130
AVERAGE		3.364			174.5	8.1	95		252.7	13.9	94		8.7	1.2	85	
MAXIMUM			6.410	50.900												
NO. OF SAMPLES					25											

DESIGN DATA - METRIC

ST. MARY'S

PROJECT Town of St. Mary's WPCP
PROJECT NO. 1-0030-66
DESIGN FLOW 3.64 $10^3 m^3/d$
BOD 195 mg/l
SS 200 mg/l
RAW SEWAGE PUMPING
3 FLYGT Model CP-3200 submersible pumps
each rated 63.1 l/s @ 12.2m TDH

COMMINUTOR
Type - ECODYNE Mod 25R

SCREENING
Bar Screen

DETRITOR
Type - DORR-OLIVER Type Wa. Cap. 17.27 $10^3 m^3/d$

PRIMARY CLARIFIERS
2, each 9.1m x 3.5m swd
Volume (total) 475.26 m^3 Detention: 3.1 hr.
Overflow rate 27.38 $m^3/m^2 \cdot d$
Raw Sludge Pumps:Type - CARTER

AERATION TANKS
2, each 1.0m x 4.6m swd
Volume (total) 866.56 m^3 Detention: 5.7 hr.
Aerators: Type AMES-CROSTA
Return Sludge Pumps: 2 SMART-TURNER Model 3 WPCS

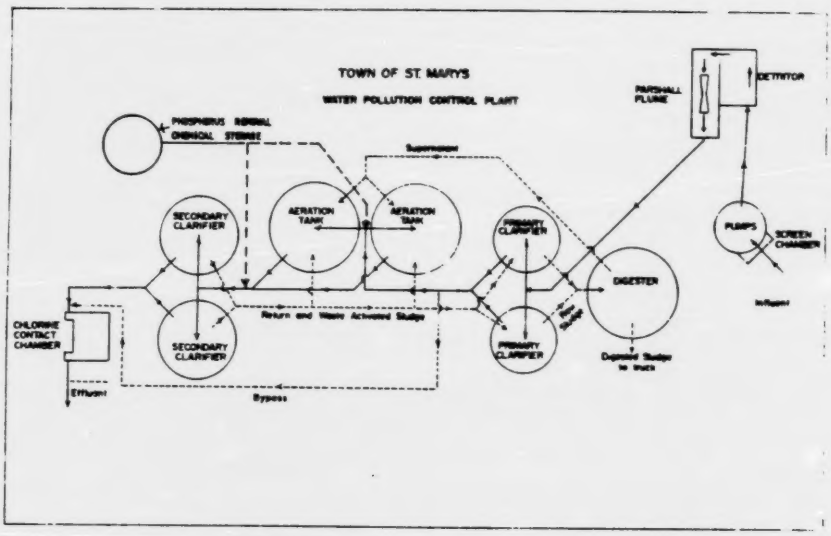
SECONDARY CLARIFIERS
2, each 10.7m x 3.05m swd
Volume (total) 549.83 m^3 Detention: 3.5 hr.
Overflow Rate: 20.29 m^3/m^2 d

CHLORINE CONTACT CHAMBER 4-pass
2 passes 1.34m x 4.08m x 2.9m swd
1 pass 1.48m x 4.08m x 2.9m swd
1 pass 2.04m x 4.08m x 2.9m swd
Volume(total) 6.95 m^3 Detention: 29 min.

CHLORINATOR TYPE
Wallace and Tiernan

PRIMARY DIGESTER
One, 12.2m x 1.d_3 x 6.1m swd
Volume: 754.73 m^3

Outfall
Discharge to Thames River



DESIGN DATA - IMPERIAL

PROJECT	Town of St. Marys WPCP
PROJECT NO.	1-0030-66
DESIGN FLOW	0.800 MIGD
BOD -	195 mg/l
SS -	200 mg/l

RAW SEWAGE PUMPING

3 FLYGT Model CP03200 submersible pumps each rated 1000 USGPM @ 40' TDH

COMMINUTOR

Type - ECODYNE Mod 25R

SCREENING

Bar Screen

DETRITOR

Type - DORR-OLIVER Type WA.
Cap. 3.8 MGD

PRIMARY CLARIFIERS

2 each 30.0' i.d.x11.5'swd
Volume (total) 104540 I. gal.
Detention: 3.1 hr.
Overflow rate: 560 gpd per sq.ft.
Raw Sludge Pumps: Type - CARTER

AERATION TANKS

2 each 36.0' i.d.x15.0'swd
Volume (total) 190,620 I.gal.
Detention: 5 7 hr.
Aerators: Type AMES-CROSTA
Return Sludge Pumps:
2 SMART-TURNER Model 3 WPCS

SECONDARY CLARIFIERS

2 each 35.0'i.d.x10.0' swd
Volume (total) 120,947 I.G.
Detention: 3.5 hr.
Overflow Rate: 415 gpd per sq.ft.

CHLORINE CONTACT CHAMBER 4-pass

2 passes4.4' wx13.0'lx9.5'swd
1 pass 4.8'wx13.0'lx9.5'swd
1 pass 6.7'wx13.0'lx9.5'swd
Volume (total) 1528 I.G.
Detention: 29 min.

CHLORINATOR TYPE

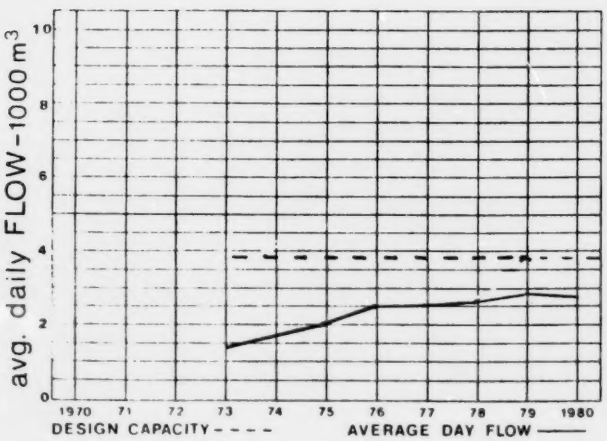
Wallace and Tiernan

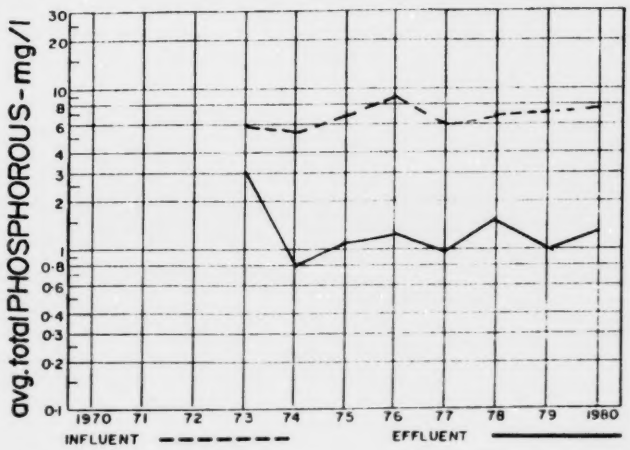
PRIMARY DIGESTER

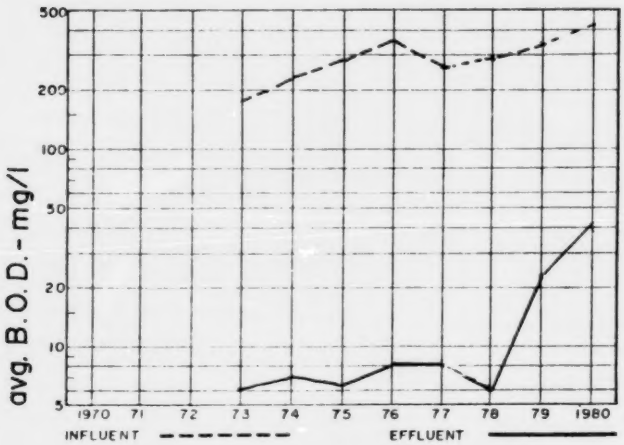
1 - 40.0' i.d.x20.0'swd
Volume: 26650 cu.ft.

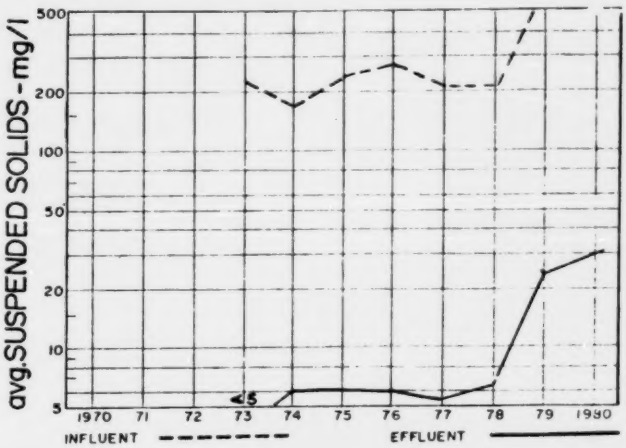
OUTFALL

Discharge to Thames River









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001275 ST MARY'S WPCP

MUNICIPALITY : ST MARY'S
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 4,709
POPULATION SERVED : 4,733
PERCENT SERVED : 100.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.636 1000 M3 DESIGN BOD5 : 195.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	90.700	2.900	3.800	9.000	404.0	30.0	92	33.9	263.0	23.0	91	21.7	9.7	.6	93	.825
FEB	75.300	2.500	3.300	9.000	394.0	41.0	89	26.5	779.0	28.0	96	56.5	8.4	.7	91	.577
MAR	104.600	3.400	7.400	9.000	463.0	51.3	88	43.0	474.0	39.0	91	45.5	7.0	.7	90	.659
APR	112.700	3.800	5.600	9.000	468.0	69.0	85	44.9	500.0	55.0	89	50.1	8.4	1.3	84	.800
MAY	83.100	2.700	3.100	9.000	384.0	39.0	89	28.6	950.0	31.9	96	76.2	8.3	1.7	79	.548
JUN	81.200	2.700	3.800	9.000	510.0	58.4	88	36.6	526.0	28.0	94	40.4	6.6	1.1	82	.444
JUL	82.600	2.700	3.600	9.000	388.0	58.0	85	27.2	380.9	24.0	93	29.4	7.0	1.3	80	.468
AUG	79.200	2.600	3.400	9.000	585.0	32.3	94	43.7	2055.0	47.5	97	158.9	9.9	1.6	83	.657
SEP	75.400	2.500	3.200	9.000	529.0	62.0	88	35.2	1406.8	30.9	97	103.7	9.1	3.1	65	.452
OCT	90.800	2.900	4.400	9.000	256.0	13.0	94	22.0	123.5	29.8	75	8.5	7.2	.9	87	.572
NOV	79.500	2.700	3.400	9.000	460.0	20.3	95	34.9	205.3	13.6	93	15.2	6.8	.9	86	.468
DEC	90.700	2.900	4.100	9.000	244.0	11.5	95	21.0	105.8	11.3	89	8.5	5.9	1.6	72	.392
TOTAL	1045.800							398.2				615.2				6.862
AVERAGE		2.858			423.7	40.4	90		647.4	30.1	95		7.8	1.3	83	
MAXIMUM			7.400	9.000												
NO. OF SAMPLES					51	49			51	50			51	50		

DESIGN DATA - METRIC

TILLSONBURG

Project: Town of Tillsonburg WPCP
Project No.: 1-0137-67
Design Flow: 8.183 $10^3 m^3/d$
BOD: Raw Sewage - 235 mg/l
Removal 95%

SS: Raw Sewage - 250 mg/l
Removal 95%

PRIMARY TREATMENT

AIR DEGRITTER:
Size, 4.0m x 4.6m x 3.05m swd
Volume: 55.279m^3 Detention: 9.7 min.

PRIMARY SEDIMENTATION
Two, Size 15.2m x 3.05m x 2.4m swd
One, Size 15.2m x 6.1m x 2.5m swd
Volume: (total) 463.69m^3
Detention: 1.3 hours
Overflow Rate: 44.0 $m^3/m^2 \cdot d$

SECONDARY TREATMENT

AERATION TANKS:
Type: Diffused Air
Size: Four, size 15.2m x 9.1m x 4.0m swd
Volume (total): 2213.9m^3
Detention: (total) 6.5 hours

SECONDARY SEDIMENTATION:
Size: Two, size 15.3m x 3.5m x 3.7m swd
One, size 19.8m x 6.1m x 3.81m swd
Volume (total): 809.19m^3
Detention (total) 2.4 hr.
Overflow Rate: 38.13 $m^3/m^2 \cdot d$

CHLORINATION
Chlorinator: Type: W & T A 731
Size: 181.4 kg/d

CHLORINE CONTACT CHAMBER:
Size: 6.4m x 6.1m x 2.6m
Volume: 1091.1 m^3

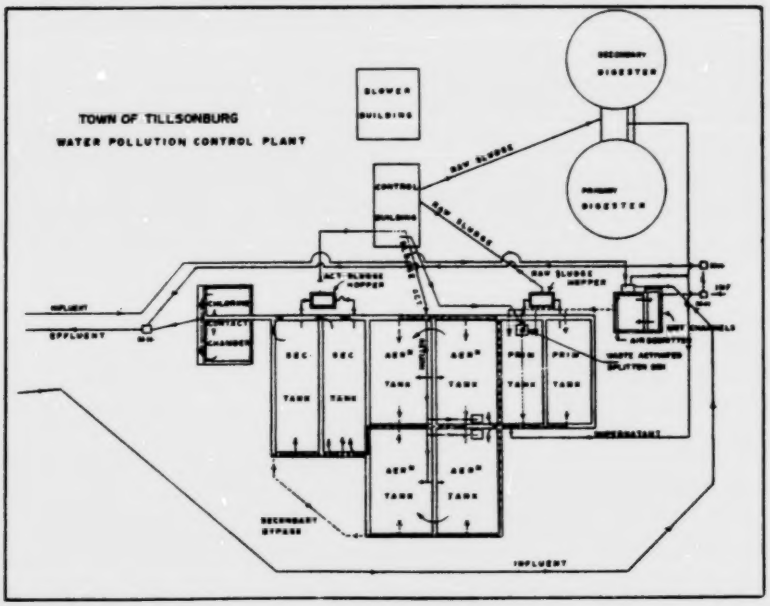
OUTFALL - to creek

SLUDGE HANDLING:
Digestion System: Two-Stage
Primary Digester: 13.7m x 6.1m
Volume: 1019.5 m^3
Secondary Digester: 13.7m x 6.1m
Volume: 1019.5m^3

PUMPING STATION:
John Pound Street Pumping Station

Capacity: 12.274 $10^3 m^3$/ d plus 50% standby

Screening and Comminution.



DESIGN DATA - IMPERIAL

Project: Town of Tillsonburg WPCP
Project No.: 1-0137-67
Design Flow: 1.8 MGD
BOD: Raw Sewage - 235 mg/l
Removal 95%
SS: Raw Sewage - 250 mg/l
Removal 95%

PRIMARY TREATMENT

AIR DEGRITTER:
Size, 13' x 15' x 10' swd
Volume: 12,160 I. Gal. Detention: 9.7 min.

PRIMARY SEDIMENTATION:
Two, Size 50.3' x 10' x 8' swd
One, Size 50' x 20' x 8.25' swd
Volume: (total) 102,000 I. Gal.
Detention: 1.3 hours
Overflow Rate: 900 gal/ft^2/day

SECONDARY TREATMENT

AERATION TANKS:
Type: Diffused Air
Size: Four, size 50' x 30' x 13' swd
Volume (total): 487,000 I. Gal.
Detention: (total) 6.5 hours

SECONDARY SEDIMENTATION:
Size: Two, size 50.3' x 10' x 12.25' swd
One, size 65' x 20' x 12.5' swd
Volume (total): 178,000 I. Gal.
Detention (total) 2.4 hr.
Overflow Rate: 780 gal/ft^2/day

CHLORINATION:
Chlorinator: Type W & T A731
Size. 400 lb/day

CHLORINE CONTACT CHAMBER:
Size: 21' x 20' x 9.2' swd
Volume: 24,000 I. Gal. Detention: 19 min.

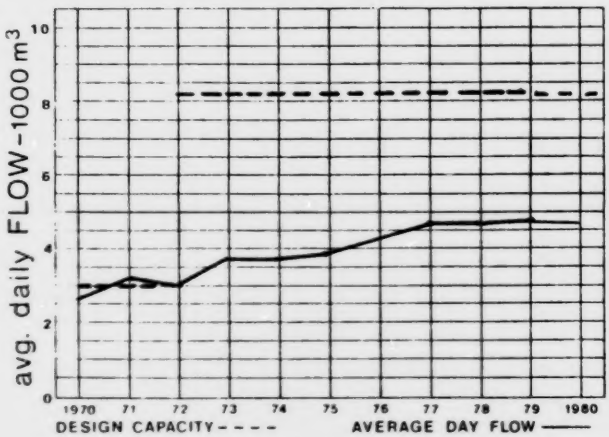
OUTFALL - to creek

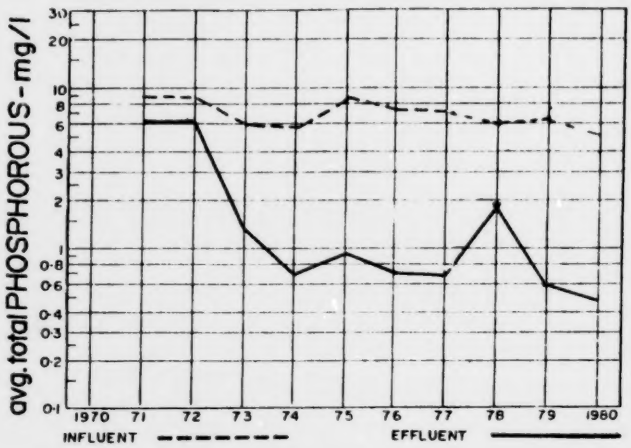
SLUDGE HANDLING:
Digestion System : Two-Stage
Primary Digester: 45' dia. x 20' swd
Volume: 36,000 ft^3
Secondary Digester: 45' dia. x 20' swd
Volume: 36,000 ft^3

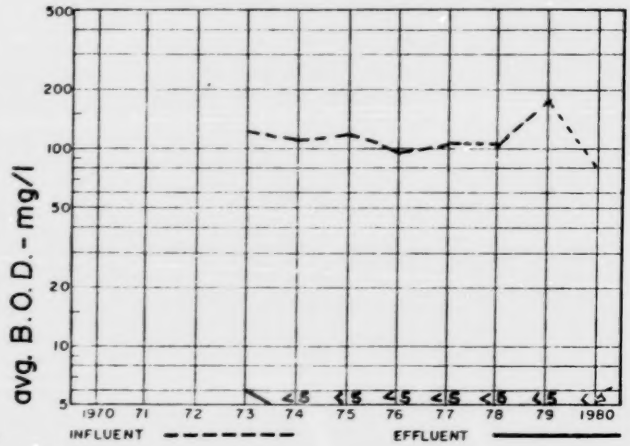
PUMPING STATION:
John Pound Street Pumping Station

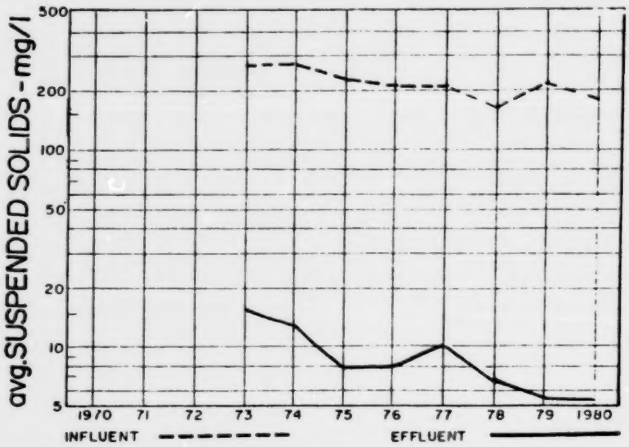
Capacity: 2.7 MGD plus 50% standby

Screening and Comminution.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000757 TILLSONBURG MPCP

MUNICIPALITY : TILLSONBURG
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 9,774
POPULATION SERVED : 10,350
PERCENT SERVED : 105.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 8.182 1000 M3 DESIGN BOD5 : 235.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	148.319	4.784	6.133	11.000	88.0	1.6	98	12.8	163.0	6.8	95	23.1	5.5	.5	90	.742
FEB	125.155	4.315	4.566	7.600	80.0	3.4	95	9.5	156.8	7.0	95	18.7	5.3	.5	90	.601
MAR	146.308	4.719	6.387	11.000	94.0	4.4	95	13.1	167.2	6.1	96	23.5	5.6	.5	91	.746
APR	161.247	5.374	7.196	10.900	78.0	4.6	94	11.8	164.0	5.7	96	25.5	4.9	.4	91	.726
MAY	145.703	4.700	5.432	9.000	70.0	2.2	96	9.8	188.0	6.0	96	26.5	5.0	.6	88	.641
JUN	140.598	4.686	5.455	13.000	62.0	3.2	94	8.2	171.8	5.8	96	23.3	3.9	.5	87	.478
JUL	135.912	4.384	5.655	13.000	70.0	6.6	90	8.6	176.1	5.4	96	23.2	5.9	.4	92	.745
AUG	137.754	4.444	4.662	10.300	86.0	2.2	97	11.5	202.3	6.7	96	26.9	5.7	.5	90	.711
SEP	132.037	4.401	4.979	13.000	92.0	4.0	95	11.6	168.8	3.9	97	21.7	4.7	.4	90	.564
OCT	138.247	4.460	5.464	11.000	82.0	2.4	97	11.0	223.5	5.9	97	30.0	6.9	.6	91	.871
NOV	132.015	4.401	4.619	7.200	70.0	2.4	96	8.9	179.1	6.6	96	22.7	5.6	.5	90	.672
DEC	144.989	4.677	5.252	8.400	110.0	3.2	97	15.4	196.4	9.0	95	27.1	6.0	.5	91	.797
TOTAL	1688.284							132.6				292.8				8.294
AVERAGE		4.612			81.8	3.3	95		179.7	6.2	96		5.4	.5	90	
MAXIMUM			7.196	13.000												
NO. OF SAMPLES					12	12			63	63			12	12		

DESIGN DATA - METRIC

TUCKERSMITH (VAN ASTRA)

PROJECT: Van Astra WPCP

PROJECT NO: 2-1003-73

DESIGN FLOW: 1.4 $10^3 m^3/d$

COMMINUTOR
One

GRIT REMOVAL
none

PRIMARY SEDIMENTATION
Type: One, circular
Size: 9.1m i.d x 2.4m swd
Volume: 160.3 m^3
Retention: 1.9 hr.
Loading:
- Surface 37.1$m^3/m^2 \cdot d$
- Weir 78.0$m^3/m \cdot d$

AERATION TANKS
Type: Two, rectangular
Size: each 18.3m x 3.0m x 3.0m swd
Volume (total): 336.6m^3
Retention: 4.0 hr

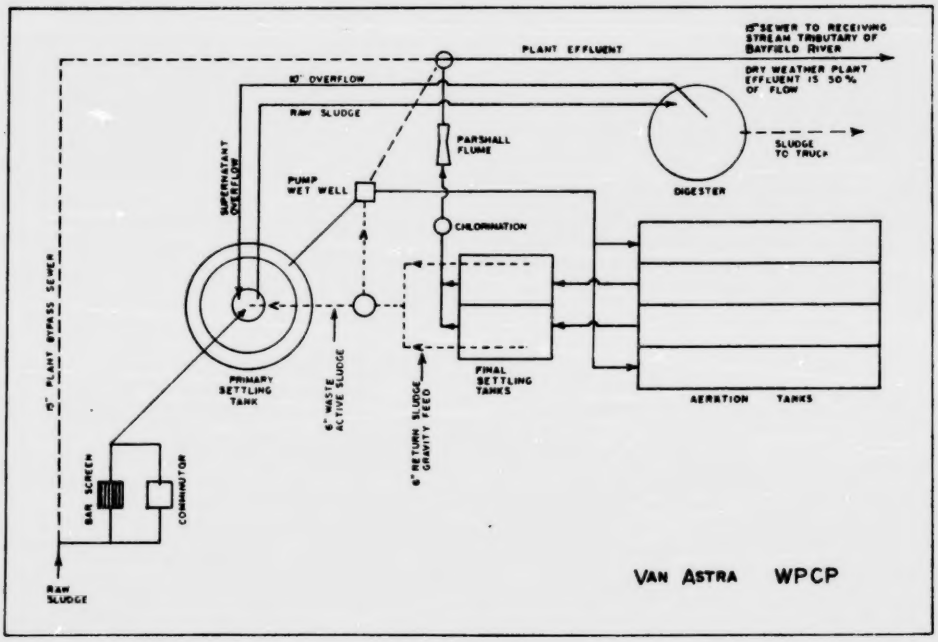
BLOWERS

Type: Two, positive displacement
Size: One, 188.1 l/s
One, 167.2 l/s

SECONDARY SEDIMENTATION
Type: Two, square
Size: 6.4m x 6.4m x 3.0m swd
Volume: (total) 244.3m^3
Retention: 2.9 hr

SLUDGE DIGESTION
Type: single-stage anaerobic
Size: 10.4m i.d. x 6.4m swd
Volume: 540.9m^3

CHLORINATION
Type: gas



DESIGN DATA - IMPERIAL

PROJECT: Vanastra WPCP

PROJECT NO: 2-1003-73

DESIGN FLOW: 0.31 MGD

COMMINUTOR
One

GRIT REMOVAL
none

PRIMARY SEDIMENTATION
Type: One, circular
Size: 30' i.d x 8' swd
Volume: 35,300 I.G.
Retention: 1.9 hr
Loading:
- Surface 758 I.G./ft^2/day
- Weir 5233 I.G./ft/day

AERATION TANKS
Type: Two, rectangular
Size: each 60' x 10' x 10' swd
Volume (total): 74,800 I.G.
Retention: 4.0 hr

BLOWERS

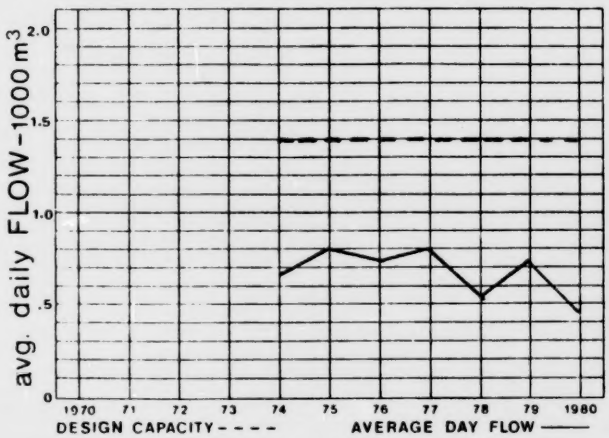
Type: Two, positive displacement
Size: One, 450 cfm

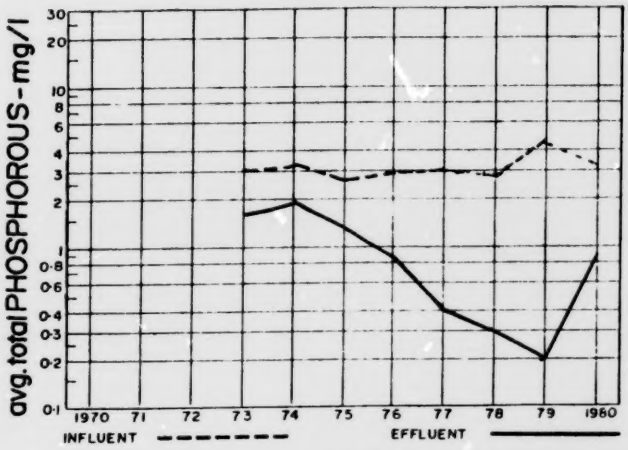
One, 400 cfm

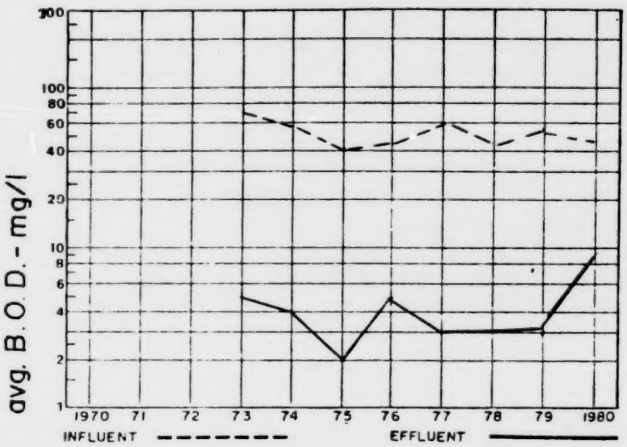
SECONDARY SEDIMENTATION
Type: Two, square
Size: 21' x 21' x 9.75' swd
Volume: (total) 53,800 I.G.
Retention: 2.9 hr

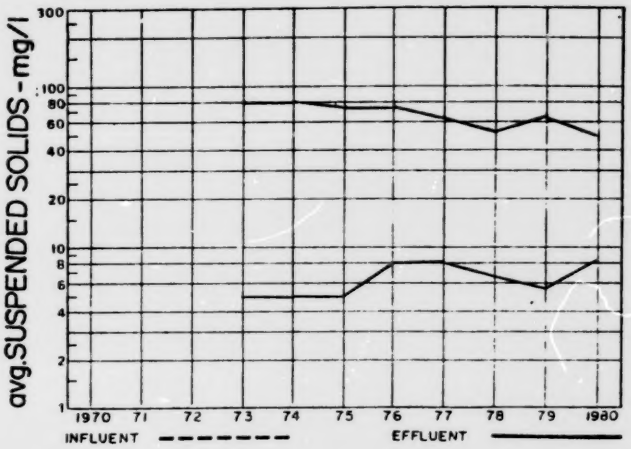
SLUDGE DIGESTION
Type: single-stage anaerobic
Size: 34' i.d. x 21' swd
Volume: 19100 ft^3

CHLORINATION
Type: gas









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110003013 VAN ASTRA W P C P

MUNICIPALITY : TUCKERSMITH (VAN ASTRA)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY

CURRENT POPULATION : 600
POPULATION SERVED : 600
PERCENT SERVED : 100.0

PHOSPHORUS REMOVAL
OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.404 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	18.420	.594	1.180		55.0	24.6	55	.5	71.5	14.0	80	1.0	3.5	.6	82	.053
FEB	11.692	.403	.703		74.0	22.0	70	.6	90.0	13.5	85	.8	3.9	1.0	74	.034
MAR	28.397	.920	1.927		58.0	17.4	70	1.1	61.0	5.0	91	1.5	3.4	.5	85	.082
APR	28.570	.952	1.387		15.0	13.9	7		28.0	4.3	84	.6	1.5	.3	79	.035
MAY	19.957	.644	1.209		28.0	6.4	77	.4	24.0	10.0	58	.2	2.7	.4	85	.046
JUN	12.966	.432	.889		49.0	3.0	93	.5	69.5	3.3	95	.8	3.3	.5	84	.036
JUL	8.939	.288	.824		31.3	1.7	94	.2	27.2	2.1	92	.2	2.4	.7	70	.015
AUG	6.423	.207	.494		81.0	6.8	91	.4	63.7	4.6	92	.3	5.6	2.4	57	.021
SEP	7.562	.252	.633		44.0	3.0	93	.3	40.7	3.6	91	.2	3.5	2.0	42	.011
OCT	10.861	.350	.609		63.0	3.6	94	.6	45.8	10.3	77	.3	3.2	1.1	64	.022
NOV	8.164	.272	.407		39.0	3.9	90	.2	30.1	16.8	44	.1	2.9	1.5	48	.011
DEC	11.253	.363	.997		36.7	3.5	90	.3	36.4	13.0	64	.2	2.0	.8	60	.014
TOTAL	173.204							5.7				7.0				.380
AVERAGE		.473			47.8	9.1	80		48.9	8.3	82		3.1	.9	68	
MAXIMUM			1.927													
NO. OF SAMPLES					23	23			23	23			23	23		

DESIGN DATA - METRIC

WALLACEBURG

PROJECT: Town of Wallaceburg WPCP

PROJECT NO.: 1-0087-67

DESIGN POPULATION: 13,500

DESIGN LOADING: 6.819 $10^3 m^3/d$

DESIGN BOD LOADING: 200 mg/l

DESIGN SS LOADING: 250 mg/l

COMMINUTION

No. of units - 1
Type: Barminutor

GRIT REMOVAL

No. of tanks - 1
Type: Aerated by diffusers

PRIMARY SEDIMENTATION

No. of tanks - 2
Tank dimensions: 4.9m x 14.6m x 4.4m each
Detention: 2.22 hours

AERATION

No. of tanks - 2
Type: aerated by diffusers
Tank dimensions: 4.9m x 32.3m x 4.0m each
Detention: 4.49 hours

SECONDARY SEDIMENTATION

No. of tanks - 2
Tank dimensions: 21.9m x 4.9m x 3.8m each
Detention: 2.68 hours

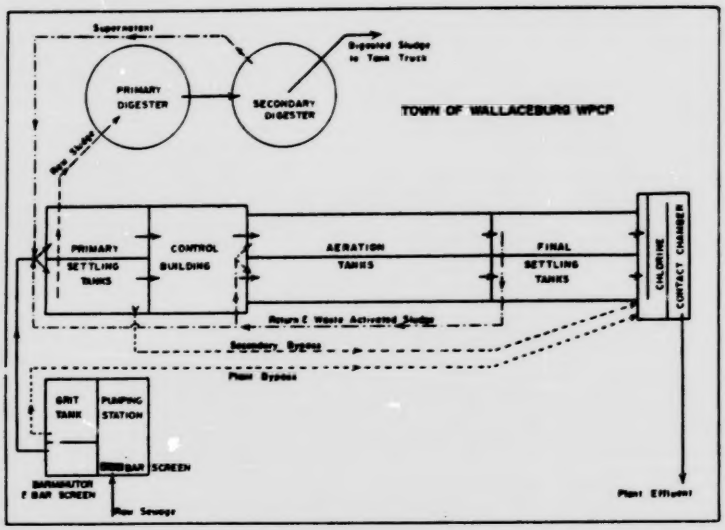
CHLORINATION

No. of tanks - 1
Detention: 21.8 min.

SLUDGE DIGESTION

No. of tanks - 2
Tank dimensions: one @ 10.7m dia. x 5.8m
one @ 10.7m x 5.6m
Total Detention: 21.1 days

Note: Also 10 Remote Sewage Pumping Stations.



DESIGN DATA - IMPERIAL

PROJECT Town of Wallaceburg WPCP

PROJECT NO.	1-0087-67
DESIGN POPULATION	13,500
DESIGN LOADING	1.5 IMGD
DESIGN BOD	200.0 mg/l
DESIGN SS	250.0 mg/l

COMMINUTION

No. of units - 1
Type: Barminutor

GRIT REMOVAL

No. of tanks - 1
Type: Aerated by diffusers

PRIMARY SEDIMENTATION

No. of tanks - 2
Tank dimensions: 16'x48'x14.5' each
Detention: 2.22 hours

AERATION

No. of tanks - 2
Type: aerated by diffusers
Tank dimensions: 16'x106'x13.25' each
Detention: 4.49 hours

SECONDARY SEDIMENTATION

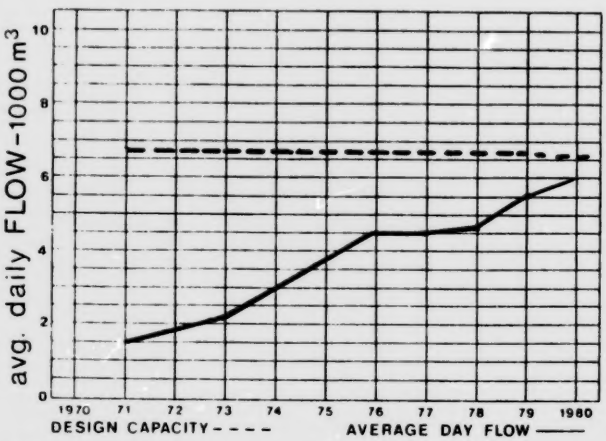
No. of tanks - 2
Tank dimensions: 72'x16'x12.5' each
Detention: 2.68 hours

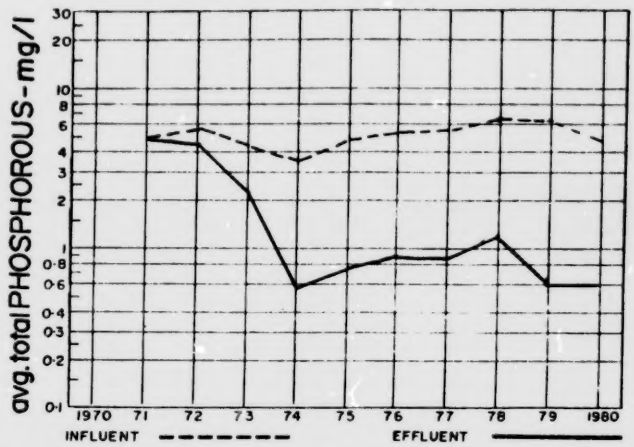
CHLORINATION

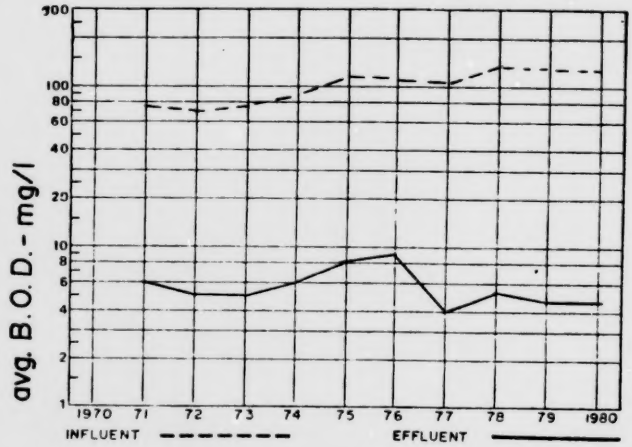
No. of tanks - 1
Detention: 21.8 min.

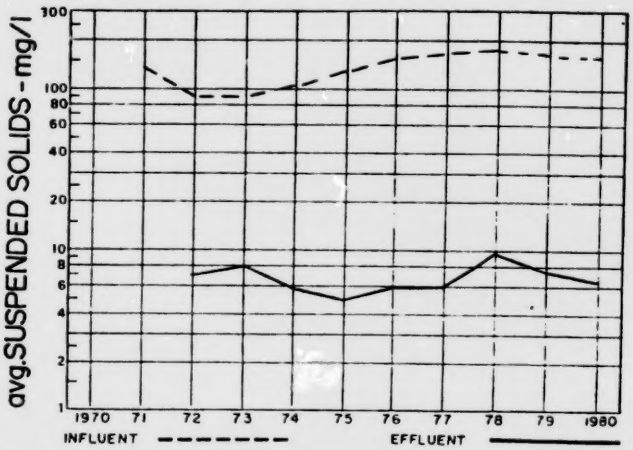
SLUDGE DIGESTION

No. of tanks - 2
Tank dimensions: one @ 35' dia x 19'
one @ 35' x 18.5'
Total Detention: 21.1 days









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000784 MALLACEBURG MPCP

MUNICIPALITY : MALLACEBURG
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 11,143
POPULATION SERVED : 8,500
PERCENT SERVED : 76.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 6.819 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	206.033	6.646	8.046	20.216	152.5	3.8	97	30.6	279.3	8.5	96	55.7	7.7	.6	92	1.463
FEB	164.323	5.666	6.596	9.092	154.0	4.0	97	24.6	238.9	7.0	97	38.0	5.1	.5	89	.751
MAR	222.792	7.187	12.077	12.729	130.2	4.6	96	27.9	209.2	7.6	96	44.9	5.9	.5	91	1.202
APR	246.798	8.226	14.701	15.002	118.0	4.0	96	28.1	270.5	5.7	97	65.3	4.3	.4	88	.940
MAY	187.922	6.062	8.682	13.638	126.0	5.0	96	22.7	333.8	6.6	98	61.4	5.1	.7	86	.825
JUN	177.050	5.902	7.719	34.095	131.3	2.5	98	22.8	169.6	4.6	97	29.2	5.2	.8	84	.779
JUL	172.961	5.579	7.666	34.550	118.8	3.8	96	19.8	149.8	6.9	95	24.7	6.2	.9	85	.917
AUG	187.788	6.058	8.715	35.004	164.0	3.0	98	30.2	184.6	5.0	97	33.7	3.4	.5	85	.545
SEP	170.771	5.692	7.064	32.277	137.5	5.5	96	22.5	190.5	6.5	96	31.4	3.6	.7	80	.495
OCT	166.048	5.356	6.620	10.456	144.0	7.0	95	22.7	160.5	7.5	95	25.3	4.1	.4	89	.607
NOV	142.287	4.743	5.655	8.183	173.3	8.0	95	23.5	159.5	6.5	95	21.7	4.1	.6	85	.498
DEC	171.740	5.540	8.297	11.820	136.7	5.3	96	22.5	322.1	5.1	98	54.4	2.9	.6	79	.395
TOTAL	2216.513							298.4				486.3				9.417
AVERAGE		6.055			140.5	4.7	96		222.3	6.4	97		4.8	.6	87	
MAXIMUM			14.701	35.004												
NO. OF SAMPLES					50	49			252	251			12	46		

Ministry of the Environment
Ontario

West Central Region

②

REGIONAL OFFICE

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P.O. BOX 2112
811-521-7640

DISTRICT OFFICES

Welland
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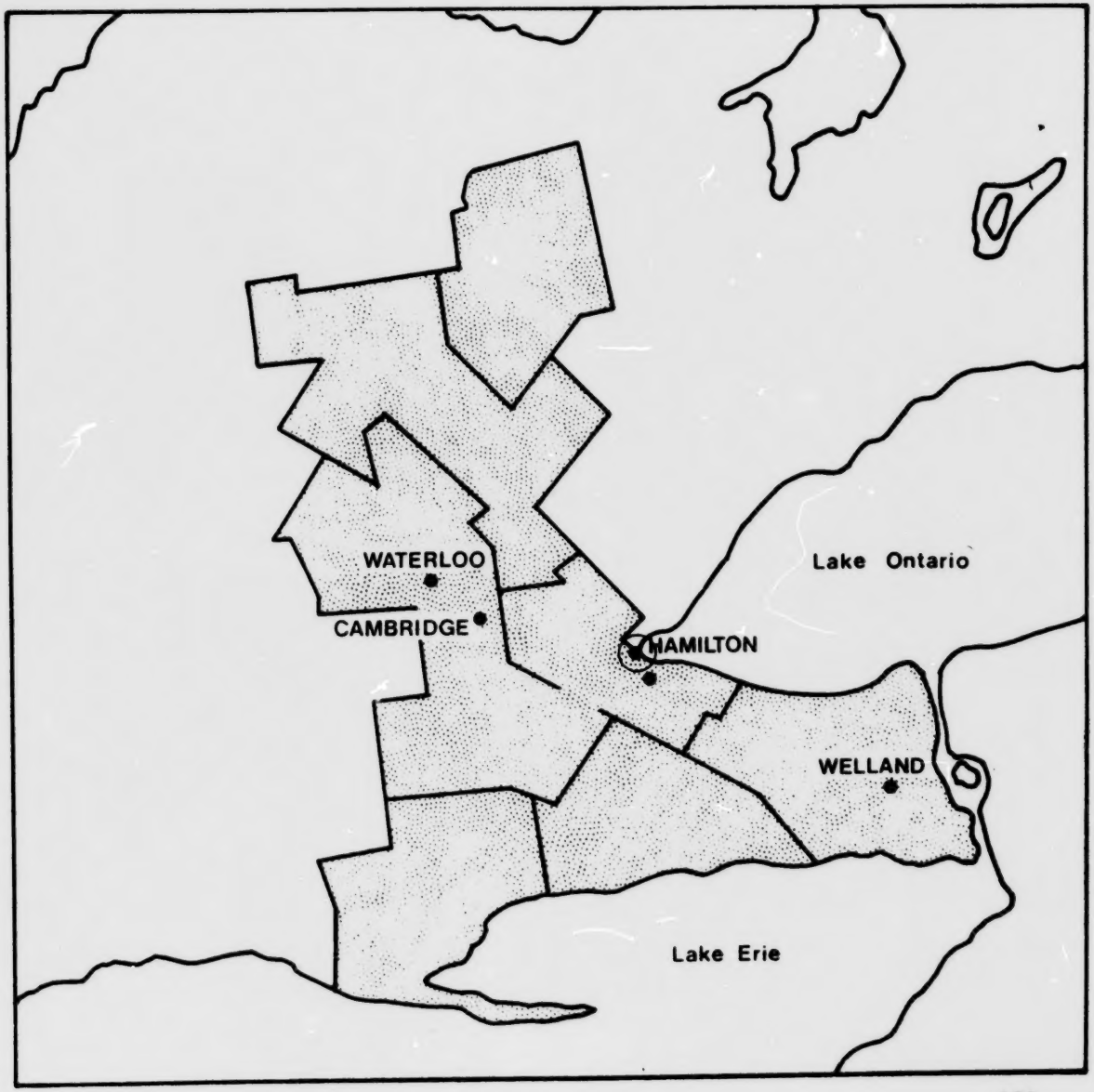
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

Ministry
of the
Environment
Ontario

West Central Region

②



BRANTFORD

DESIGN DATA - METRIC

PROJECT City of Brantford WPCP

PROJECT NO. 2-[illegible]1-58

TREATMENT Conventional Seconda

DESIGN FLOW 56.8 $10^3 m^3/d$

DESIGN POPULATION 65,000

BOD - Raw Sewage 170 mg/l
- Removal 90%

SS - Raw Sewage 175 mg/l
- Removal 90%

PRIMARY TREATMENT

Screening

Type: Coarse bar screens
Size: Two 127.0mm spaces

Comminution

Type: Infilco Rotograter
Size: Two No. 43 (36.4 $10^3 m^3/d$)

Raw Sewage Pumps

Type: Fairbanks-Morse
Size: Four 290.7 l/s at 13.7m TDH

Grit Removal

Type: Dorr Detritor, Type WA
Size: Two 6.1m x 6.1m x 0.4m
Flow Velocity: 304.8mm/s
Retention: 0.725 min.

Primary Sedimentation

Type: Eimco, Type C
Size: Four 21.3m dia x 3.05m swd
Retention: 2 hours
Loading: Surface, 39.7 $m^3/m^2 \cdot d$
Weir, 211.6 $m^3/m \cdot d$

SECONDARY TREATMENT

Aeration Tanks

Type: Two triple-pass tanks ACM mech aerators in first pass: Diffused air in 2nd and 3rd passes

Size of pass, 60.7m x 9.1m x 4.6m
Retention: 7.5 hr.

Air Supply

Type: Sutorbilt blowers
Size: Three 1797 l/s

Secondary Sedimentation

Type: Eimco, Type C
Size: Four 21.3m dia x 3.05m swd
Retention: 2 hr
Loading: Surface, 39.7 $m^3/m^2 \cdot d$
Weir, 211.6 $m^3/m \cdot d$

CHLORINATION

Chlorinator

Type: Fischer & Porter Manual adjustment - liquid chlorine evaporator

Chlorine Contact Chamber

Size: 15.5m x 5.5m x 2.1m
Retention: 5 min.

OUTFALL

Grand River

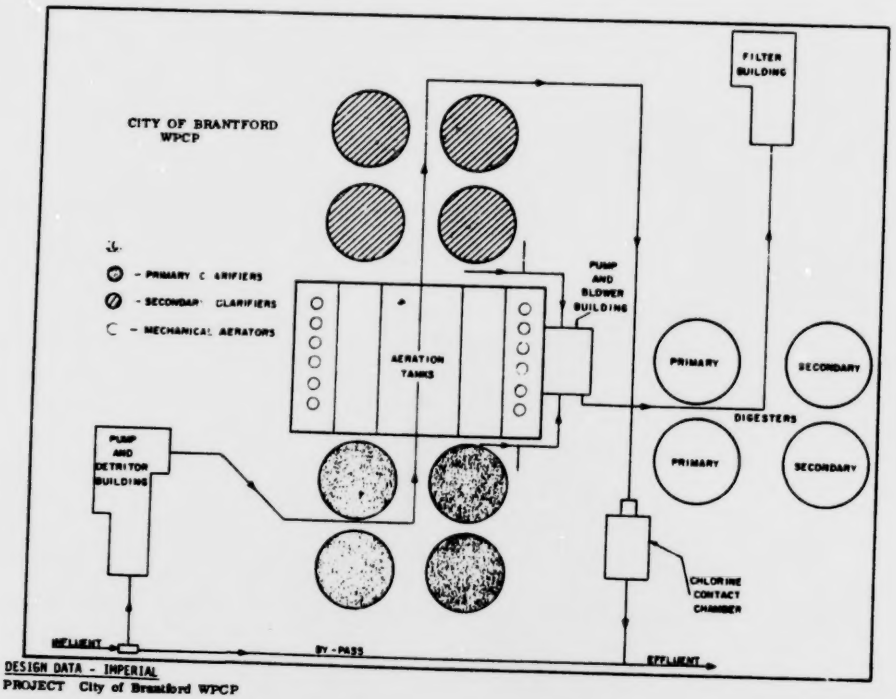
SLUDGE HANDLING

Digestion System

Type: Two-stage
Primary: Two 16.8m dia tanks with two D-O-L mixers each
Volume: 1396.2 m^3
Loading: 62.2 kg/m^3
Secondary: Two 21.3m dia tanks with Dorr floating covers
Volume: 2752.7 m^3
Total Loading: 20.4 kg/m^3

Vacuum Filter

Type: Komline-Sanderson coil filters
Size: Two 32.5m^2 filters



DESIGN DATA - IMPERIAL

PROJECT City of Brantford WPCP

PROJECT NO. 3-0011-58

TREATMENT Conventional Secondary

DESIGN FLOW 12.5 mgd

DESIGN POPULATION 65,000

BOD - Raw Sewage 170 mg/l
- Removal 90%

SS - Raw Sewage 175 mg/l
- Removal 90%

PRIMARY TREATMENT

Screening

Type: Coarse bar screens
Size: Two 5 in. spaces

Comminution

Type: Infilco Rotograter
Size: Two No. 43 (8 mgd ea)

Raw Sewage Pumps

Type: Fairbanks-Morse
Size: Four 3840 gpm ea @ 45' tdh

Grit Removal

Type: Dorr Detritor, Type WA
Size: Two 20' x 20' x 1'-3"
Flow Velocity: 1 fps
Retention: 0.725 min

Primary Sedimentation

Type: Eimco, Type C
Size: Four 70' dia x 10' swd
Retention: 2 hours
Loading: Surface, 812 gal/ft^2/day
Weir, 14,200 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Two triple-pass tanks ACM mech aerators in first pass; Diffused air in 2nd and 3rd passes.

Size of pass, 200' x 30' x 15'
Retention: 7.5 hr

Air Supply

Type: Sutorbilt blowers
Size: Three 4300 cfm

Secondary Sedimentation

Type: Eimco, Type C
Size: Four 70' dia x 10' swd
Retention: 2 hr
Loading: Surface, 812 gal/ft^2/day
Weir, 14,200 gal/ft/day

CHLORINATION

Chlorinator

Type: Fischer & Porter Manual adjustment - liquid chlorine evaporator

Chlorine Contact Chamber

Size: 51' x 18' x 7'
Retention: 5 min

OUTFALL

Grand River

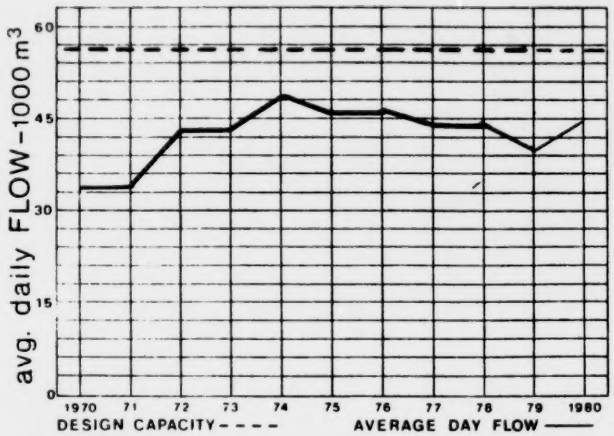
SLUDGE HANDLING

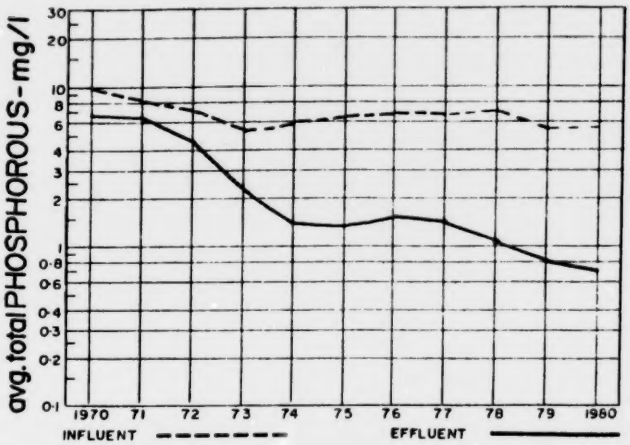
Digestion System

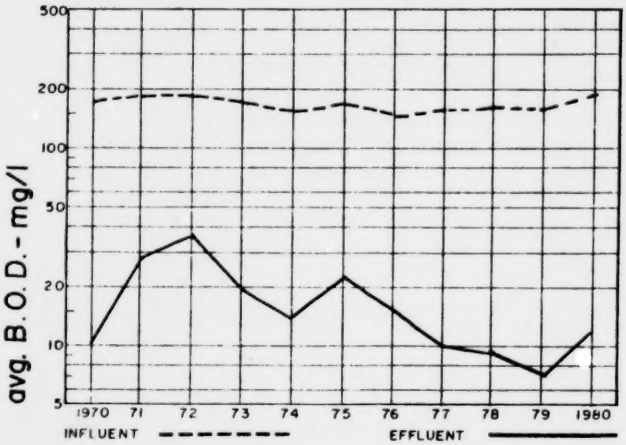
Type: Two-stage
Primary: Two 58' dia tanks with two D-O-L mixers each
Volume 49,300 cu ft or 300,000 gal (each tank)
Loading 6.1 lb/ft^3/mo
Secondary: Two 70' dia tanks with Dorr floating covers
Volume 97,200 cu ft or 600,000 gal (each tank)
Total Loading: 2.0 lb/ft^3/mo

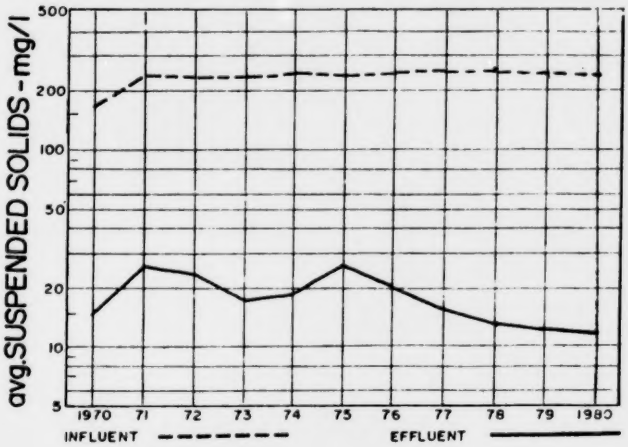
Vacuum Filter

Type: Komline-Sanderson coil filters
Size: Two 350 sq ft filters









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000043 BRANTFORD WPCP

MUNICIPALITY : BRANTFORD
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 69,091
POPULATION SERVED : 73,000
PERCENT SERVED : 105.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 56.825 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 175.0 MG/L

	<— FLOW DATA				—><—BIOCHEMICAL OXYGEN DEMAND—><				—><— SUSPENDED SOLIDS —><				—><— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	1409.100	45.400	51.400	75.000	156.0	8.7	94	207.5	227.0	11.6	94	303.5	5.5	.7	87	6.806
FEB	1117.400	38.500	44.500	69.500	205.0	11.6	94	216.1	242.0	14.4	94	254.3	5.8	.6	89	5.833
MAR	1380.300	44.500	54.500	75.000	168.0	19.0	88	205.6	251.0	17.5	93	322.3	5.9	.6	88	7.274
APR	1518.300	50.600	57.700	75.000	150.0	12.6	91	208.6	215.0	17.1	92	300.4	4.7	.6	87	6.225
MAY	1391.300	44.900	50.500	75.000	145.0	7.5	94	191.3	226.0	12.0	94	297.7	6.1	.8	85	7.332
JUN	1345.500	44.800	54.100	75.000	189.0	12.0	93	238.1	229.0	12.1	94	291.8	5.8	1.0	82	6.418
JUL	1340.100	43.200	53.200	75.000	154.0	12.8	91	189.2	204.0	8.1	96	262.5	5.6	.9	83	6.312
AUG	1412.500	45.600	53.600	75.000	175.0	11.0	93	231.6	244.0	9.5	96	331.2	4.9	.6	85	5.947
SEP	1305.000	43.500	54.100	75.000	188.0	12.5	93	229.0	244.0	11.8	95	303.0	5.3	.8	84	5.820
OCT	1386.000	44.700	58.600	72.700	239.0	22.7	90	299.7	271.0	11.5	95	359.6	6.0	.8	86	7.193
NOV	1295.900	43.200	48.200		203.0	3.3	98	258.7	252.0	8.0	96	316.2	5.9	.9	84	6.441
DEC	1278.600	41.200	47.500		234.0	5.7	97	291.9	206.0	5.9	97	255.8	6.7	.6	90	7.838
TOTAL	16180.000							2767.7				3598.6				79.439
AVERAGE		44.175			183.8	11.6	93		234.2	11.6	95		5.7	.7	86	
MAXIMUM			58.600	75.000												
NO. OF SAMPLES					61	61			220	232			62	232		

CAMBRIDGE (GALT)

DESIGN DATA - METRIC

PROJECT: City of Cambridge (Galt) WPCP

PROJECT NO: 1-0099-67

TREATMENT: Conventional Secondary

DESIGN FLOW: 38.641 $10^3 m^3/d$

DESIGN POPULATION: 34,000

BOD: - Raw Sewage 250 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 90%

PRIMARY TREATMENT

Comminution

Type: C. P. Barminutor
Size: One Model C (0.914m)

Raw Sewage Pumps

Type: Babcock-Wilcox
Size: Three 26.50 l/s at 9.1 m

Grit Removal

Type: Eimco Detritor
Size: One 5.5m x 5.5m x 0.6m deep
Volume: 18.18m^3
Retention: 1.15 min.

Primary Sedimentation

Type: (a) Dorr (old cl.)
(b) Eimco (new cl.)
Size: Two 18.3m dia x 2.7 m swd
Volume: (1433 m^3)
Retention: 1.5 hours
Loading: Surface, 43.22 $m^3/m^2 \cdot d$
Weir, 197.43 $m^3/m \cdot d$

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical aeration
Single pass (5-cell))
Size: Four 45.7m x 9.1m x 4.2m
(662.69 m^3)
Retention: 7.0 hours

Aerators

- Twenty Ames-Crosta

Secondary Sedimentation

Type: Eimco
Size: Two 22.9m dia x 3.05m swd
Volume: 2503.49 m^3
Retention: 2.64 hours
Loading: Surface, 27.67 $m^3/m^2 \cdot d$
Weir, 157.94 $m^3/m \cdot d$

CHLORINATION

- One F & P Automatic

Chlorine Contact Chamber

Size: One 15.0m x 6.6m x 2.2m
Volume: 209m^3
Retention: 13.25 min

OUTFALL

- to Grand River

SLUDGE HANDLING

Digestion System

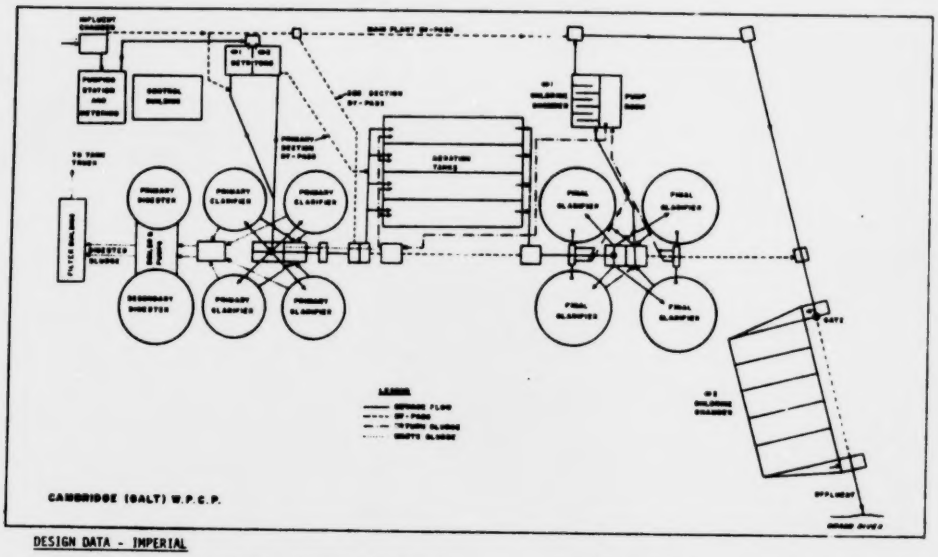
Type: Two-stage

Primary--
Type: Eimco draft tube mixers (2) on concrete roof
Size: One 15.2m dia. x 6.1 m swd
Volume: 8580.96m^3

Secondary--
Size: One 21.3m dia. x 6.1 m swd
Volume: 2180.64 m^3

Vacuum Filter

Type: Eimco (cloth)
Size: One 35.3 m^2



DESIGN DATA - IMPERIAL

PROJECT NO. 1-0099-67

TREATMENT Conventional Secondary

DESIGN FLOW 8.5 mgd

DESIGN POPULATION 34,000

BOD - Raw Sewage 250 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 90%

PRIMARY TREATMENT

Comminution

Type: C.P. Barminutor
Size: One Model C (36")

Raw Sewage Pumps

Type: Babcock-Wilcox
Size: Three 3500 gpm @ 30' tdh

Grit Removal

Type: Eimco Detritor
Size: One 18' x 18' x 2' deep
(4,000 gal)
Retention: 1.15 min

Primary Sedimentation

Type: (a) Dorr (old cl.)
(b) Eimco (new cl.)
Size: Two 60' dia x 9' swd
50,800 cu ft or 315,000 gal)
Retention: 1.5 hours
Loading: Surface, 884 gal/ft^2/day
Weir, 13,250 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical aeration
Single pass (5-cell)
Size: Four 150' x 30' x 13.7'
(234,000 cu ft or 1.46 mil gal)
Retention: 7.0 hours

Aerators

- Twenty Ames-Crosta

Secondary Sedimentation

Type: Eimco
Size: Two 75' dia x 10' swd
(88,400 cu ft or 550,000 gal)
Retention: 2.64 hours
Loading: Surface, 586 gal/ft^2/day
Weir, 10,800 gal/ft/day

CHLORINATION

- One F & P Automatic

Chlorine Contact Chamber

Size: One 49.25' x 21.5' x 7.25'
(48,000 gal)
Retention: 13.25 min

OUTFALL

- to Grand River

SLUDGE HANDLING

Digestion System

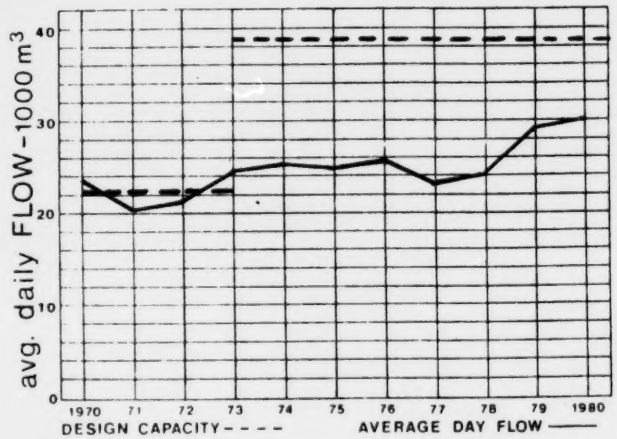
Type: Two-stage

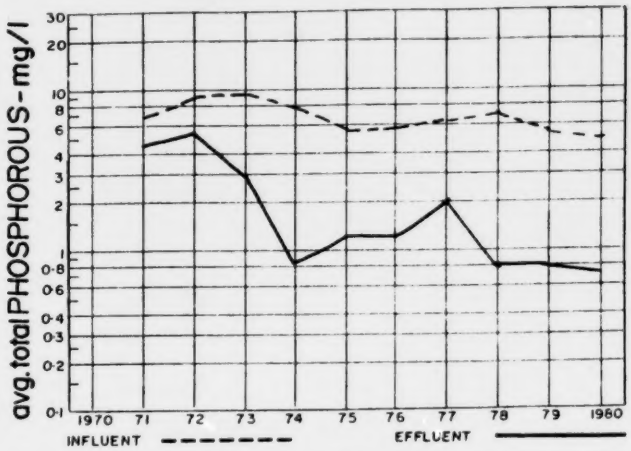
Primary --
Type: Eimco draft tube mixers (2) on concrete roof
Size: One 50' dia x 20' swd (30,300 cu ft or 189,000 gal)

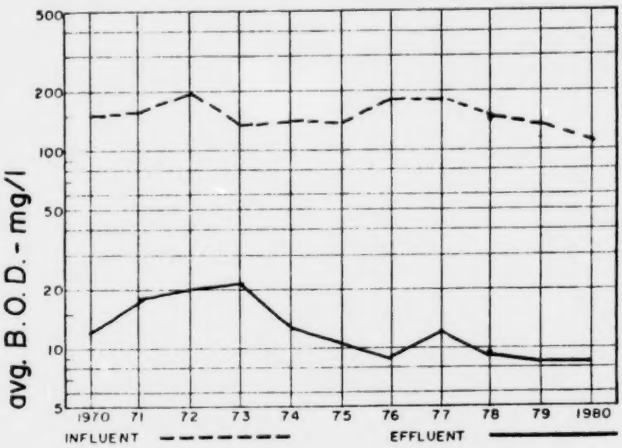
Secondary --
Size: One 70' dia x 20' swd (77,000 cu ft or 480,000 gal)

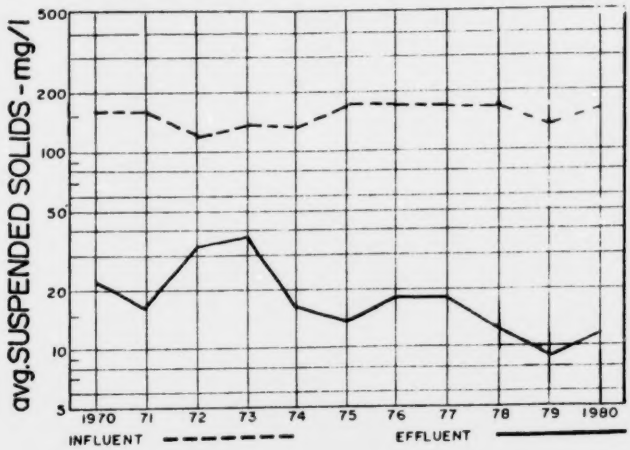
Vacuum Filter

Type: Eimco (cloth)
Size: One, 380 sq ft









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000276 GALT MPCP EXPAND IN 79

MUNICIPALITY : CAMBRIDGE (GALT)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 73,314
POPULATION SERVED : 48,000
PERCENT SERVED : 65.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 38.641 1000 M3 DESIGN BOD5 : 250.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	905.000	29.194	37.210	86.370	121.5	4.8	96	105.6	147.0	10.5	92	123.5	7.5	.9	87	5.946
FEB	823.220	28.380	30.660	60.000	114.0	13.0	88	83.1	155.0	20.5	86	110.7	7.2	.8	88	5.252
MAR	936.295	30.200	47.160	84.100	115.0	6.3	94	101.7	142.0	7.8	94	125.6	6.3	.7	87	5.159
APR	962.730	32.090	38.770	84.100	97.0	4.9	94	88.6	137.0	10.0	92	122.2	5.6	.7	86	4.650
MAY	959.400	30.948	34.690	86.390	90.0	18.0	80	69.0	148.0	14.0	90	128.5	5.5	.8	84	4.432
JUN	920.734	30.690	35.400	84.100	123.0	8.9	92	105.0	141.0	9.8	93	120.8	5.8	.7	87	4.696
JUL	920.810	29.700	42.600	85.000	94.0	5.2	94	81.7	157.0	9.1	94	136.1	3.7	.6	83	2.836
AUG	944.890	30.480	39.690	85.500	121.0	5.5	95	109.1	157.0	8.5	94	140.3	3.9	.7	81	2.995
SEP	915.075	30.500	35.030	71.800	104.0	8.3	92	87.5	162.0	16.7	89	132.9	5.5	.8	84	4.255
OCT	907.060	29.260	34.380	75.500	114.0	10.0	91	94.3	155.0	8.1	94	133.2	6.6	.7	88	5.324
NOV	890.100	29.670	32.400	62.400	119.0	7.3	93	99.4	169.0	10.0	94	141.5	8.0	.7	90	6.418
DEC	903.190	29.135	35.510	88.600	125.0	5.5	95	107.9	184.0	11.6	93	155.7	6.8	.7	89	5.500
TOTAL	10988.504							1133.4				1571.4				57.463
AVERAGE		30.021			111.4	8.1	92		154.5	11.3	92		6.0	.7	87	
MAXIMUM			47.160	88.600												
NO. OF SAMPLES					79	81			247	290			101	239		

DESIGN DATA - METRIC

CAMBRIDGE (PRESTON)

PROJECT City of Cambridge (Preston) WPCP

PROJECT NO 1-0134-67

TREATMENT Conventional Secondary

DESIGN FLOW 16.866 $10^3 m^3/d$

BOD - Raw Sewage 470 mg/l
- Removal

SS - Raw Sewage 470 mg/l
- Removal

PRIMARY TREATMENT

Grit Removal

Type: Dorr detritor
Size: One 6.1m x 6.1m x .45m
Volume: 17.0 m^3
Retention: 2.1 min

Comminution

Type: Barminutor
Size: Model C (914.4mm)

Primary Sedimentation

Type: Dorr
Size: Four 15.2m dia. x 3.05m swd
Volume: 2236.6m^3
Retention: 3.2 hr.
Loading: Surface, 22.49 $m^3/m^2.d$
Weir, 85.38 $m^3/m.d$

Sewage Lift Pumps

Type: Worthington
Size: Two 195.3 l/s
Size: One 136.2 l/s

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical: single-pass
Size: Two 45.7m x 9.1m x 4.0m
Volume: 3323m^3
Retention: 4.7 hr.

Aerators

- Ten Ames-Crosta x 18.6kW

Secondary Sedimentation

Type: Dorr
Size: Four 15.2 m dia x 3.05m swd
Volume: 2236.6 m^3
Retention: 3.2 hr.
Loading: Surface, 22.49 $m^3/m^2.d$
Weir, 85.38 $m^3/m.d$

CHLORINATION

Type: F & P
Size: One 181.44 kg/day

Chlorine Contact Chamber

Size: One 9.1m x 4.6m x 2.0m
Volume: 85.01m
Size: one 15.2m x 9.1m x 2.0m
Volume: 266.40m^3
Retention: (both) 30 min.

OUTFALL

- to Grand River

SLUDGE HANDLING

Holding Tank

Size: One 6.1m x 6.1m x 3.4m
Volume: 102.08 m^3

Digestion System

- Two-Stage

Primary Digester

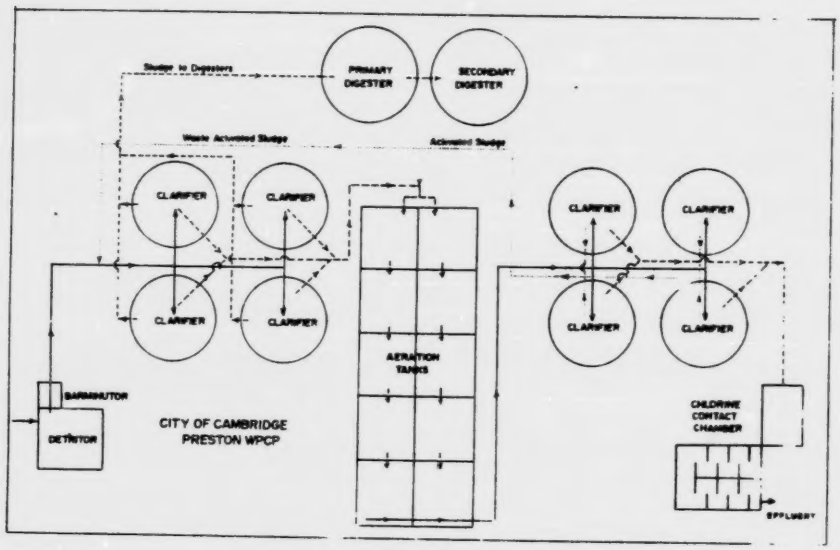
Size: One 15.2m dia. x 11.6m swd
Volume 2259.9m^3

Secondary Digester

Size: One 15.2m dia x 11.6m swd
Volume 2259.9 m^3

Sludge Recirculating Pump

Type: Carter Duplex Mod 805
Size: 15.1 U/S @ 13.2m TDH



DESIGN DATA - IMPERIAL

PROJECT NO. 1-0134-67

TREATMENT Conventional Secondary

DESIGN FLOW 3.71 mgd

BOD - Raw Sewage 470 mg/l

SS - Raw Sewage 470 mg/l

PRIMARY TREATMENT

Grit Removal

Type: Dorr detritor
Size: One 20' x 20' x 1½' (3,740 gal)
Retention: 2.1 min

Comminution

Type: Barminutor
Size: Model C (36")

Primary Sedimentation

Type: Dorr
Size: Four 50' dia x 10' swd
(492,000 gal)
Retention: 3.2 hr
Loading: Surface, 460 gal/ft^2/day
Weir, 5730 gal/ft/day

Sewage Lift Pumps

Type: Worthington
Size: Two 2580 gpm
One 1800 gpm

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical; single-pass
Size: Two 150' x 30' x 13'
(731,000 gal)
Retention: 4.7 hr

Aerators

- Ten Ames-Crosta x 25 HP

Secondary Sedimentation

Type: Dorr
Size: Four 50' dia x 10' swd
(492,000 gal)
Retention: 3.2 hr
Loading: Surface, 460 gal/ft^2/day
Weir, 5730 gal/ft/day

CHLORINATION

Type: F & P
Size: One 400 lb/day

Chlorine Contact Chamber

Size: One 30' x 15' x 6' 8
(18,700 gal)
Size: one 50' x 30' x 6'8"
(58,600 gal)
Retention: (both) 30 min

OUTFALL

- to Grand River

SLUDGE HANDLING

Holding Tank

Size: One 20' x 20' x 11'
(4,400 cu ft or 27,400 gal)

Digestion System

- Two-Stage

Primary Digester

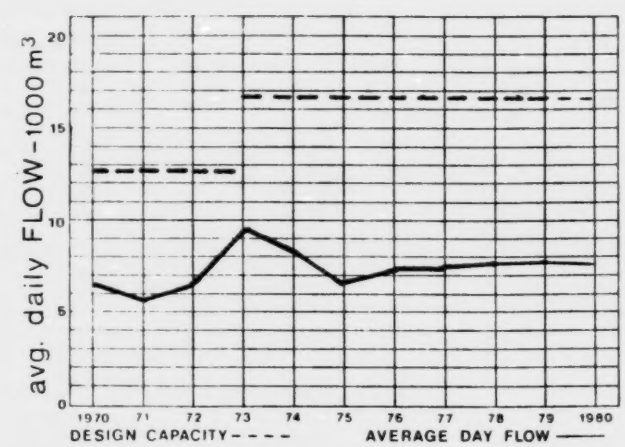
Size: One 50' dia x 38' swd
(79,800 ft^3)

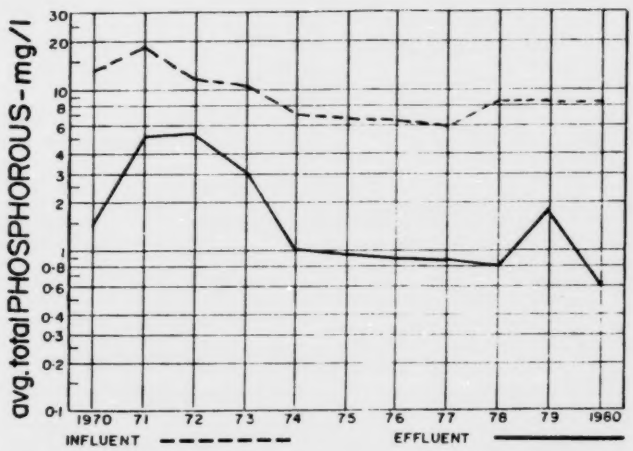
Secondary Digester

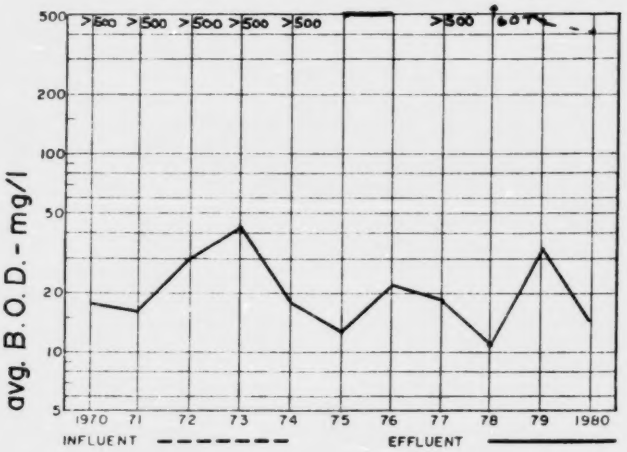
Size: One 50' dia x 38' swd
(79,800 ft^3)

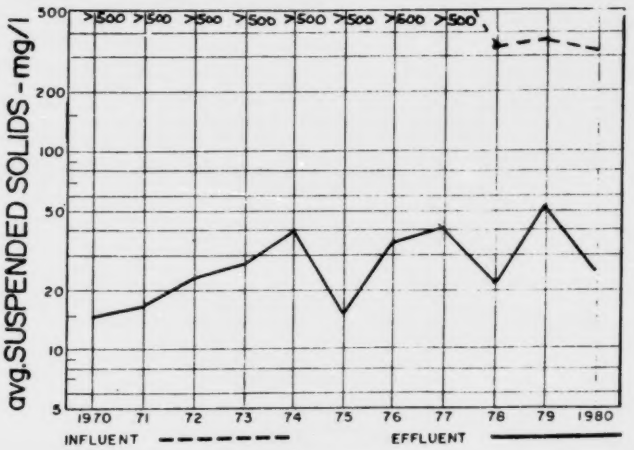
Sludge Recirculating Pump

Type: Carter Duplex Mod 805
Size: 200 gpm at 40' TDH









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000622 PRESTON WPCP

MUNICIPALITY : CAMBRIDGE (PRESTON)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 73,314
POPULATION SERVED : 19,000
PERCENT SERVED : 25.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 16.865 1000 M3 DESIGN BOD5 : 470.0 MG/L DESIGN SUSP.SOLIDS : 470.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	258.603	8.342	9.993	23.320	349.0	20.0	94	85.0	232.0	23.0	90	54.0	7.0	.8	88	1.603
FEB	228.247	7.871	8.592	20.730	266.0	21.0	92	55.9	241.0	22.0	90	49.9	8.5	.7	91	1.780
MAR	255.593	8.245	11.621	23.730	471.0	9.0	98	118.0	143.0	18.0	87	31.9	13.1	.6	95	3.195
APR	264.889	8.830	11.938	21.960	333.0	14.0	95	84.5	328.0	20.0	93	81.5	7.5	.8	89	1.775
MAY	258.146	8.327	10.275	20.670	440.0	19.0	95	108.6	238.0	47.0	80	49.3	6.2	.5	91	1.471
JUN	225.724	7.524	9.039	19.090	356.0	35.0	90	72.4	307.0	52.0	83	57.5	8.1	1.5	81	1.490
JUL	224.382	7.238	9.793	18.100	473.0	23.0	95	100.9	394.0	35.0	91	80.5	8.6	.8	90	1.750
AUG	213.680	6.890	8.310	18.500	340.0	8.0	97	70.9	308.0	30.0	90	59.4	7.0	.5	92	1.389
SEP	229.210	7.640	13.740	18.000	445.0	8.0	98	100.1	323.0	17.0	94	70.1	6.6	.5	92	1.398
OCT	226.520	7.310	8.720	17.200	540.0	12.0	97	119.6	599.0	19.0	96	131.3	10.7	.8	92	2.243
NOV	225.940	7.530	8.360	17.300	375.0	5.0	98	83.5	388.0	16.0	95	84.0	6.8	.2	96	1.480
DEC	238.490	7.690	9.500	18.400	472.0	8.0	98	110.6	346.0	18.0	94	78.2	7.1	.4	94	1.598
TOTAL	2849.424							1110.6				828.1				21.172
AVERAGE		7.786			405.0	15.1	96		320.5	26.4	91		8.1	.6	91	
MAXIMUM			13.740	23.730												
NO. OF SAMPLES					45	94			313	269			46	99		

DESIGN DATA - METRIC

DELHI

PROJECT: Haldimand-Norfolk
(Delhi Twp)
Delhi WPCP

PROJECT NO: 2-1007-5

TREATMENT: Conventional
Secondary

DESIGN FLOW: 3.18 1000 m^3/d

BOD - Raw Sewage - 170 mg/l

SS - Raw Sewage - 190 mg/l

PRIMARY TREATMENT

GRIT CHANNELS

Size: Two, each 7.7m x .5m x .6m
Volume (each) 2.437m^3
Retention (one): 1.1 min

COMMINUTORS

Type: Chicago Pumps
Size: 254 mm

PRIMARY SETTLING TANK

Type: One, rectangular
Size: 4.3m x 16.0m x 3.7m swd
Volume: 257.304 m^3
Retention: 1.9 hr.

RAW SLUDGE PUMPS

Type: one Chicago Pump
Size: 5.678 l/s

SECONDARY TREATMENT

AERATION TANKS

Type: Two, rectangular
Size: each 15.2m x 5.6m x 5.0m swd
Volume: (total) 1018.3m^3
Retention: 7.7 hr

AERATORS

Type Four, mechanical

SECONDARY SETTLING TANKS

Type: One, circular
Size: 14.0 t.d. x 1.8m swd
Volume: 282.8m^3
Retention: 3.2 hr.

Type: One, rectangular
Size: 13.1m x 4.6m x 2.4m swd
Volume: 141.8 m^3
Retention: 3.1 hr

RETURN SLUDGE PUMPS

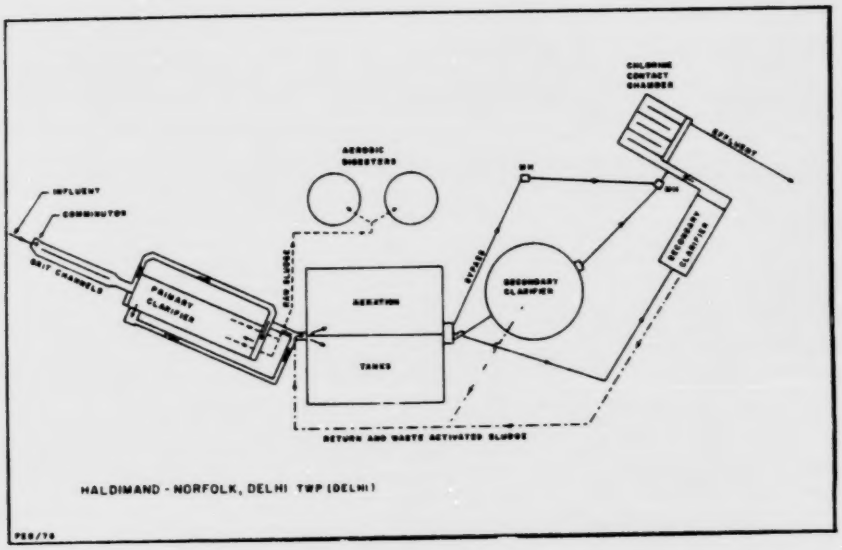
Type: Three, Hayward
Size: 11.355 l/s

AEROBIC DIGESTERS

Type: Two, circular
Size: (each) 4.1m t.d. x 5.2m swd
Volume: (each) 75.90 m^3

CHLORINE CONTACT TANK

Type: One, rectangular 6-pass
Size: 7.9m x 5.8m x 1.8m swd
Volume: 84.10m^3
Retention: 38 min.



HALDIMAND - NORFOLK, DELHI TWP (DELHI)

P&B/76

DESIGN DATA - IMPERIAL

PROJECT: Haldimand-Norfolk
(Delhi Twp)
Delhi WPCP

PROJECT NO: 2-1007-75

TREATMENT: Conventional

DESIGN FLOW: 0.7 MIGD

BOD - Raw Sewage - 170 mg/l

SS Raw Sewage - 190 mg/l

PRIMARY TREATMENT

GRIT CHANNELS

Size: Two, each 25.25' x 1.7' x 2'
Volume (each) 536 IG
Retention (one): 1.1 min

COMMINUTORS

Type: Chicago Pumps
Size: 10-inch

PRIMARY SETTLING TANK

Type: One, rectangular
Size: 14' x 54' x 12' swd
Volume: 56,600 IG
Retention: 1.9 hr

RAW SLUDGE PUMPS

Type: One, Chicago Pumps
Size: 75 IGPM

SECONDARY TREATMENT

AERATION TANKS

Type: Two, rectangular
Size: each 50' x 21.8' x 16.5' swd
Volume: (total) 234,000 IG
Retention: 7.7 hr

AERATORS

Type: Four, mechanical

SECONDARY SETTLING TANKS

Type: One, circular
Size: 46' t.d. x 6' swd
Volume: 62,200 IG
Retention: 3.2 hr

Type: One, rectangular
Size: 43' x 15' x 7.75' swd
Volume: 31,200 IG
Retention: 3.1 hr

RETURN SLUDGE PUMPS

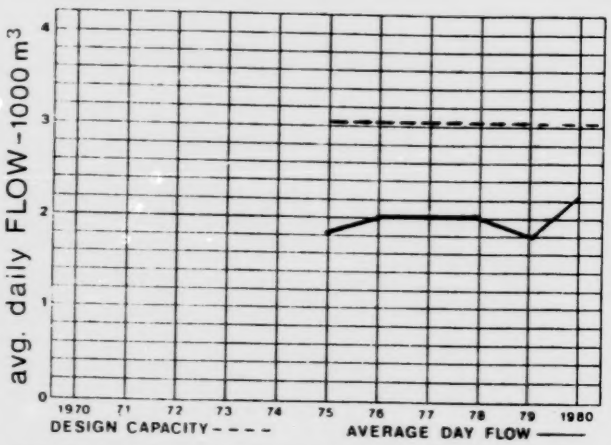
Type: Three, Hayward
Size: 150 IGPM max

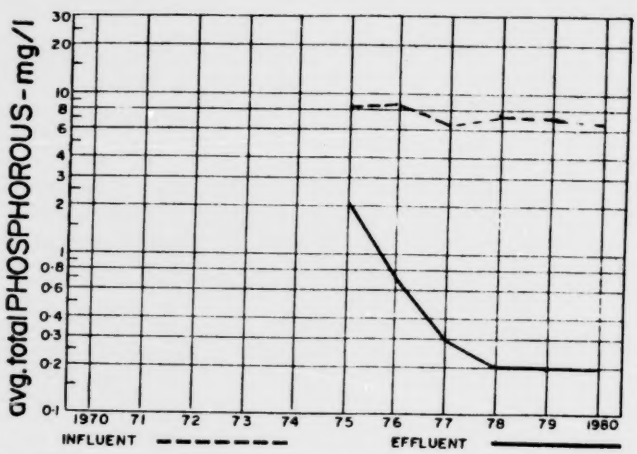
AEROBIC DIGESTERS

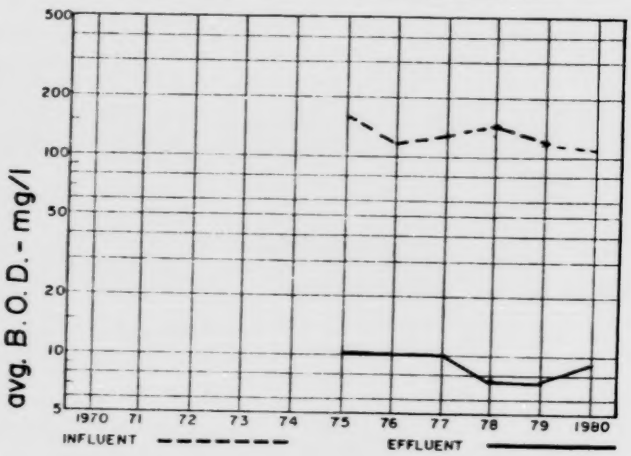
Type: Two, circular
Size: (each) 13.6' id x 17' swd
Volume: (each) 2680 ft^3

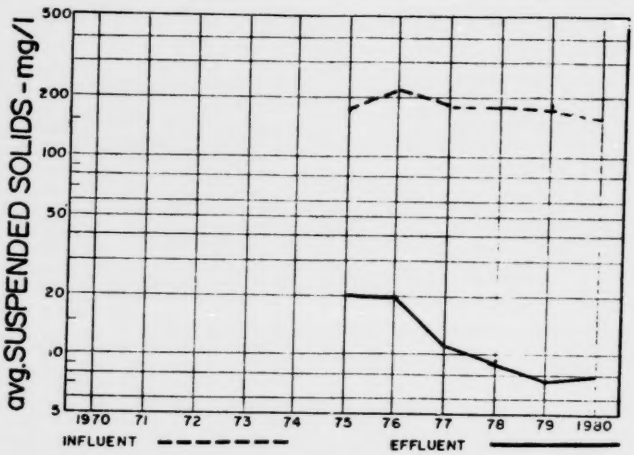
CHLORINE CONTACT TANK

Type: One, rectangular 6-pass
Size: 26' x 19' x 6' swd
Volume: 18,500 IG
Retention: 38 min









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120001425 DELHI MPCP

MUNICIPALITY : DELHI
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 14,931
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 3.182 1000 M3 DESIGN BOD5 : 170 MG/L DESIGN SUSP.SOLIDS : 190 MG/L

	<— FLOW DATA				—><—BIOCHEMICAL OXYGEN DEMAND—><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	56.040	1.810	2.060	4.550	103.0	2.1	97	5.6	140.0	6.3	95	7.4	6.6	.3	94	.350
FEB	49.980	1.720	2.020	3.640	162.0	6.0	96	7.7	168.0	10.2	93	7.8	7.9	.4	94	.371
MAR	55.850	1.800	2.370	3.640	143.0	4.3	96	7.7	189.0	9.5	94	10.0	7.5	.3	95	.399
APR	56.130	1.870	2.590	4.000	120.0	6.5	94	6.3	197.0	8.5	95	10.5	7.1	.2	96	.386
MAY	57.820	1.870	2.100	3.910	103.0	11.0	89	5.3	161.0	7.0	95	8.9	7.1	.2	96	.396
JUN	67.010	2.230	3.130	4.550	190.0	19.0	90	11.4	215.0	9.4	95	13.7	7.6	.1	98	.499
JUL	80.470	2.600	3.120	6.830	100.0	10.0	90	7.2	131.0	6.8	94	9.9	5.0	.3	92	.373
AUG	82.640	2.670	3.740	4.550	81.0	5.0	93	6.2	113.0	8.1	92	8.6	6.5	.2	96	.519
SEP	81.070	2.700	3.260	4.550	106.0	9.2	91	7.8	135.0	7.6	94	10.3	7.0	.1	97	.555
OCT	74.550	2.410	2.990	4.550	132.0	17.0	87	8.5	160.0	6.8	95	11.4	7.9	.1	97	.577
NOV	72.970	2.430	3.270	4.550	80.0	7.5	90	5.2	171.0	7.4	95	11.9	6.0	.1	97	.426
DEC	78.650	2.540	2.780	4.550	120.0	12.0	90	8.4	150.0	9.3	93	11.0	5.5	.2	96	.415
TOTAL	813.180							88.0				122.0				5.266
AVERAGE		2.221			120.0	9.1	92		160.8	8.0	94		6.8	.2	96	
MAXIMUM			3.740	6.830												
NO. OF SAMPLES					22	22			105	105			22	22		

DUNNVILLE

DESIGN DATA - METRIC

PROJECT: Town of Dunnville WPCP
PROJECT NO: 2-1010-75
TREATMENT Conventional Secondary

DESIGN FLOW: 7.7 x $10^3 m^3$/d
BOD - Raw Sewage 180 mg/l

MAIN P.S.
Pumps: Three, each 211.96 l/s

AERATED GRIT TANK
Size: 5.0m x 4.1m x 3.05m swd
Volume: 63.2 m^3
Retention: 11 min

AERATION TANKS
Type: Two
Size: each tank 10.7m x 7.6m x 4.5m
Volume (total): 1463.8 m^3
Retention: 4.5 hr.
Blowers: Two, each 2026.8 l/s
Aerators: Dorr-Inka grids

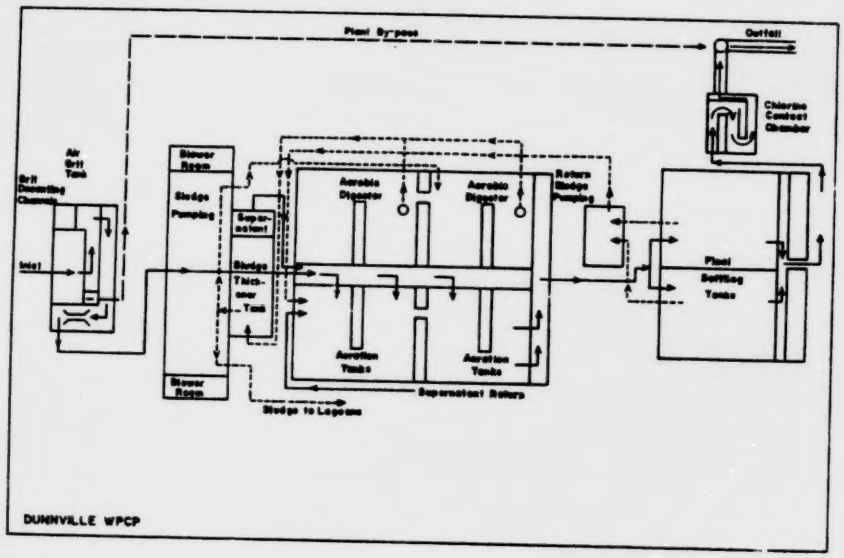
FINAL SETTLING
Size: Two, each 21.9m x 5.5m x 3.7m
Volume: 881.9 m^3
Retention: 2.7 hr.

CHLORINATION
Size: One, 10.9m x 4.5m x 3.7m
Volume: 180.0 m^3

SLUDGE HANDLING

AEROBIC DIGESTERS
Size: Four cells, each 10.6m x 7.6m x 4.5m
Volume: Total 1463.8m^3

SLUDGE LAGOONS
Size: Three, each 40.2m x 24.4m x 1.4m
Area: 13,247.5m^2



DESIGN DATA - IMPERIAL

PROJECT: Town of Dunnville WPCP

PROJECT NO. 2-1010-75

TREATMENT: Conventional Secondary

DESIGN FLOW: 1.7 MIGD

BOD - Raw Sewage 180 mg/l

MAIN P.S.
Pumps: Three, each 2800 gpm

AERATED GRIT TANK
Size: 16.5'x13.5'x10' swd
Volume: 13,900 I.G.
Retention: 11 min

AERATION TANKS
Type: Two,
Size: each tank 35'x25'x14.75'
Volume(total): 322,000 I.G.
Retention: 4.5 hr
Blowers: Two, each 4850 cfm
Aerators: Dorr-Inka grids

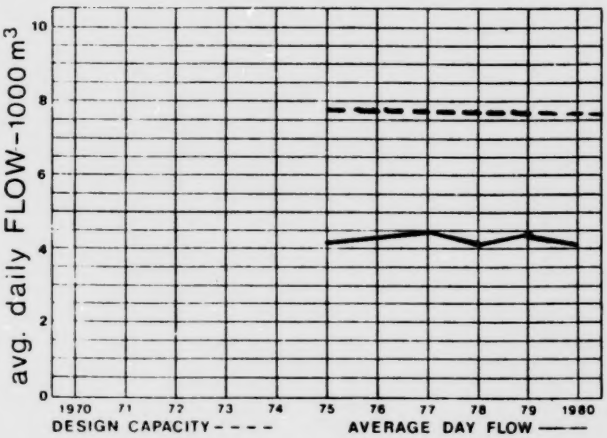
FINAL SETTLING
Size: Two, each 72'x18'x12'
Volume: 194,000 I.G.
Retention: 2.7 hr

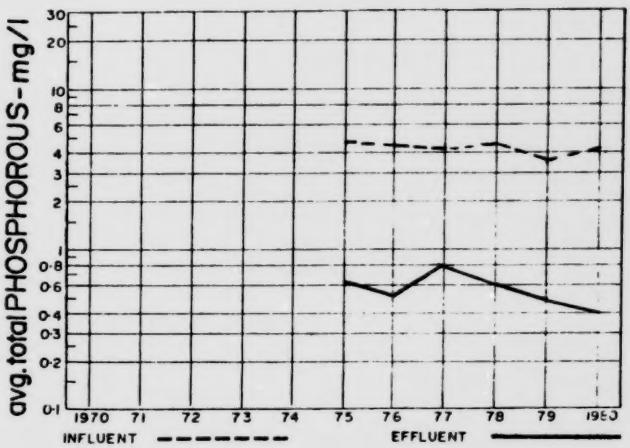
CHLORINATION
Size: One, 36'x14.7'x12'
Volume: 39,600 I.G.
Retention: 34 min

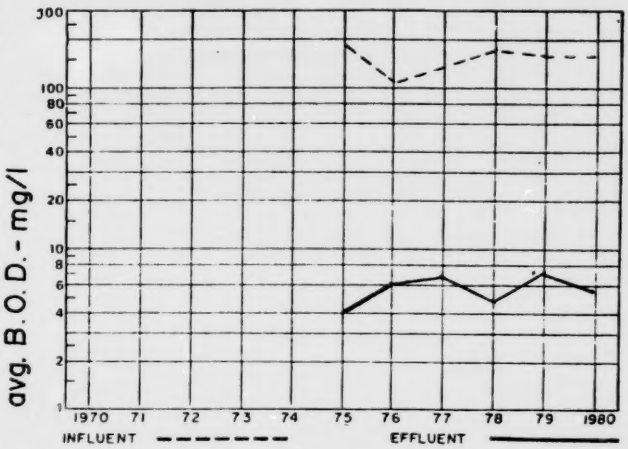
SLUDGE HANDLING

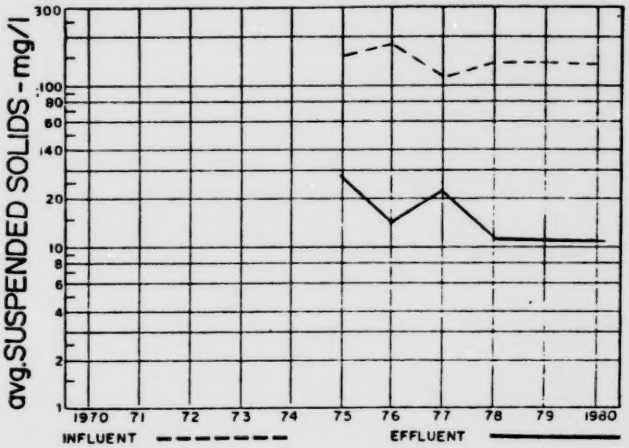
AEROBIC DIGESTERS
Size: Four cells, each 35'x25'x14.75'
Volume: Total 322,000

SLUDGE LAGOONS
Size: Three, each 132'x80'x4.5'
Area: 142,600 ft^2









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120001443 MUNICIPAL PLANT

MUNICIPALITY : DUNNVILLE
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 11,408
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 7.728 1000 M3 DESIGN BOD5 : 182.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	139.121	4.487	7.370	10.000	82.3	3.1	96	11.0	95.0	12.9	86	11.4	3.7	.4	87	.457
FEB	96.585	3.330	4.490	13.180	170.0	8.2	95	15.6	143.0	10.8	92	12.7	4.1	.5	86	.349
MAR	134.267	4.330	7.500	13.630	54.0	10.2	81	5.8	101.7	12.1	88	12.0	3.5	.3	88	.418
APR	162.438	5.414	8.000	10.900	72.0	3.0	95	11.2	108.3	12.6	88	15.5	3.7	.4	87	.526
MAY	130.052	4.335	6.090	9.540	160.0	8.5	94	19.7	163.7	11.2	93	19.8	3.8	.6	83	.415
JUN	117.481	3.916	5.890	14.540	121.0	3.8	96	13.7	163.0	12.6	92	17.6	4.8	.4	91	.515
JUL	115.772	3.734	5.410	10.450	100.0	3.8	96	11.1	134.3	13.2	90	14.0	4.5	.6	85	.447
AUG	136.786	4.412	5.420	10.900	172.0	3.0	98	23.1	149.6	10.3	93	19.0	4.6	.5	88	.557
SEP	104.822	3.494	5.080	13.630	300.0	6.0	98	30.8	157.2	9.9	93	15.4	4.4	.5	87	.403
OCT	112.060	3.614	5.500	9.090	296.7	7.0	97	32.4	237.6	13.3	94	25.1	4.5	.3	92	.465
NOV	105.990	3.533	4.640	8.180	295.0	6.2	97	30.6	181.1	10.6	94	18.0	4.9	.3	93	.483
DEC	117.164	3.780	4.840	8.630	98.0	8.5	91	10.4	137.9	11.3	91	14.8	3.9	.4	88	.405
TOTAL	1472.538							215.8				195.8				5.440
AVERAGE		4.032			160.0	5.9	96		147.7	11.7	92		4.2	.4	88	
MAXIMUM			8.000	14.540												
NO. OF SAMPLES					26	26			175	174			175	174		

DESIGN DATA - METRIC

FERGUS

PROJECT: Town of Fergus WPCP

PROJECT NO.: 2-0023-58

TREATMENT: Conventional Secondary

DESIGN FLOW: 5.00 $10^3 m^3/d$

BOD - Raw Sewage 200 mg/l
Removal 90%

SS - Raw Sewage 200 mg/l
Removal 90%

PRIMARY TREATMENT

GRIT REMOVAL
Type: Dorr-Oliver, Type T Detritor

COMMINUTION:
Type: Barminutor
Size: Model B (457.2mm)

PRIMARY SEDIMENTATION:
Type: Dorr-Oliver
Size: One 12.2m x 12.2m x 2.7m swd
Volume: 409.14 m^3
Detention: 2.0 hours
Loading: Surface: 35.58 $m^3/m^2 \cdot d$

SECONDARY TREATMENT

AERATION TANKS:
Type: Mechanical Single Pass
Size 1, 21.9m x 7.3m x 3.2m swd
1, 21.9m x 7.3m x 3.7m swd
Volume (total) - 1222.874 m^3
Retention: (total) 5.9 hours

Aerators - Ames Crosta

SECONDARY SEDIMENTATION:
Type: #1 Dorr / #2 Elmco
Size: Two, 10.7m x 10.7m x 2.7m swd
Volume (total) 622.802 m^3
Detention: 3 hours
Loading - Surface 22.0 $m^3/m^2 \cdot d$

CHLORINATION:
Type: Wallace & Tiernan V-100

CHLORINE CONTACT CHAMBER:
Size: 12.2m x 4.6m x 2.1m swd
Volume: 118.196 m^3
Detention: 34 min.

OUTFALL

- to Grand River

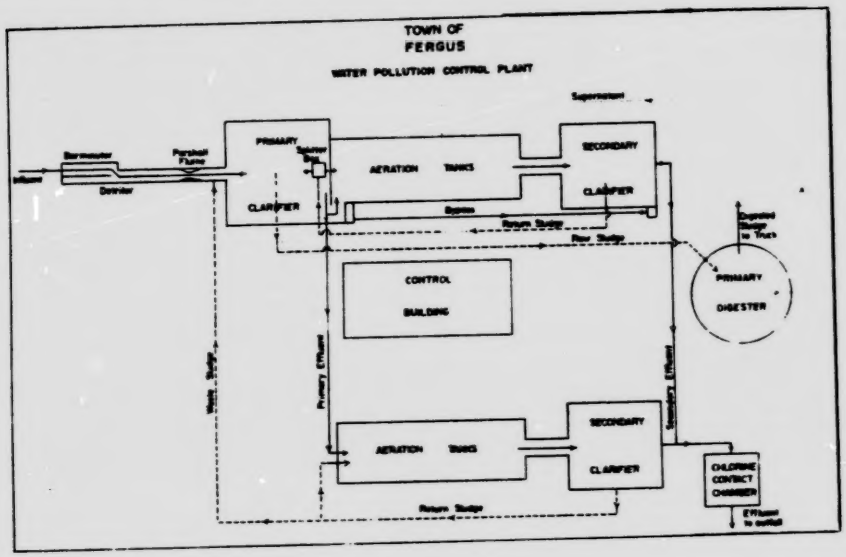
SLUDGE HANDLING

Digestion System

Type: Single stage, with floating cover and one Dorr draft tube mixer
Size: 10.7m dia. x 6.7m swd (.643 m^3)
Loading: 22.4 $kg/m^3/mo$

Drying Beds

total area, 668.88 m^2
(discontinued use in 1964)



DESIGN DATA - IMPERIAL

PROJECT No	2-0023-58
TREATMENT	Conventional Secondary
DESIGN FLOW	1.1 mgd
BOD	Raw Sewage 200 mg/l Removal 90%
SS	Raw Sewage 200 mg/l Removal 90%

PRIMARY TREATMENT

GRIT REMOVAL:
Type: Dorr-Oliver, Type T Detritor

COMMINUTION:
Type: Barminutor
Size: Model B (18")

PRIMARY SEDIMENTATION:
Type: Dorr-Oliver
Size: One 40' x 40' x 9' swd
Volume: 90,000 I. Gal.
Detention: 2.0 hours
Loading: Surface: 687 gal/ft^2 'day

SECONDARY TREATMENT

AERATION TANKS:
Type: Mechanical Single Pass
Size 1, 72' x 24' x 10.7' swd
1, 72' x 24' x 12'2" swd
Volume (total) 269,000 I. Gal
Retention: (total) 5.9 hours

Aerators - Ames Crosta

SECONDARY SEDIMENTATION:
Type: #1 Dorr / #2 Elmco
Size: Two, 35' x 35' x 9' swd
Volume (total) 137,000 I. Gal.
Detention: 3 hours
Loading - Surface 450 $gal/ft^2/day$

CHLORINATION:
Type: Wallace & Tiernan V-100

CHLORINE CONTACT CHAMBER:
Size: 40' x 15' x 7' swd
Volume: 36,000 I. Gal.
Detention: 34 min.

OUTFALL - to Grand River

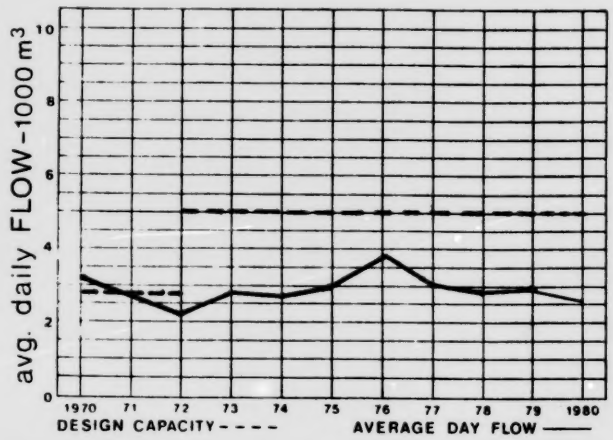
SLUDGE HANDLING

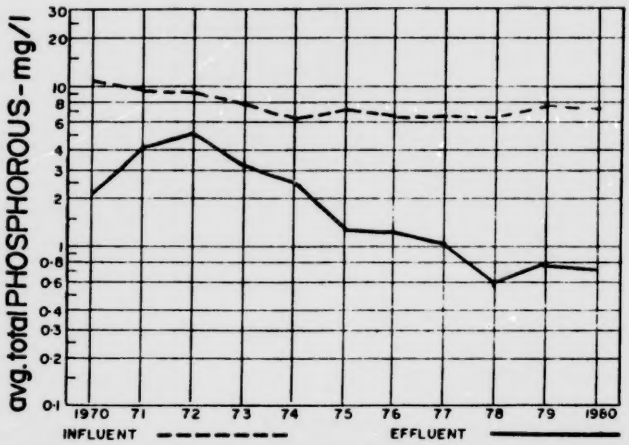
Digestion System

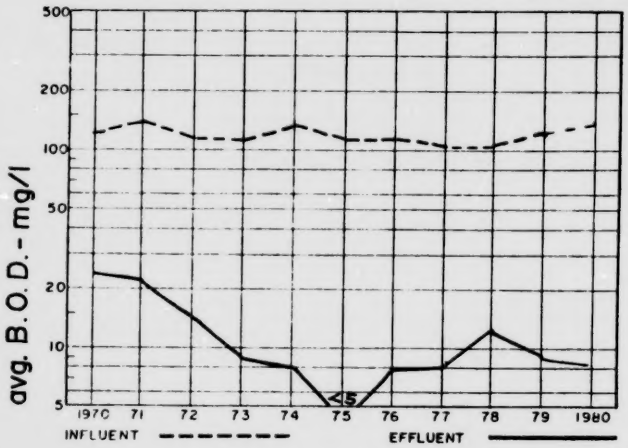
Type: Single stage, with floating cover and one Dorr draft tube mixer
Size: 35' dia x 22' swd (22,700 cu ft or 141,000 gal)
Loading: 1.40 $lb/ft^3/mo$

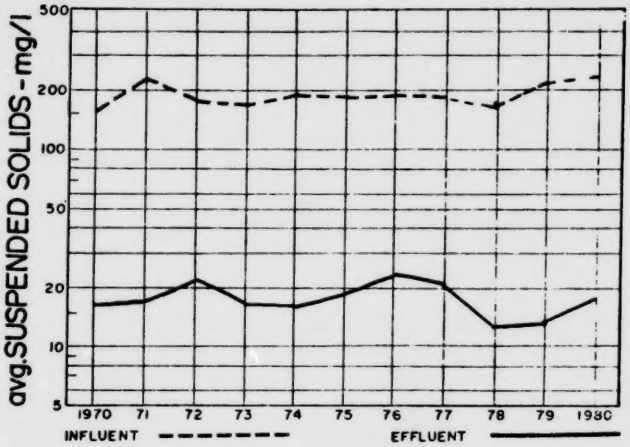
Drying Beds

- total area, 7,200 sq ft (discontinued use in 1964)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000249 FERGUS MPCP

MUNICIPALITY : FERGUS
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION	5,981
POPULATION SERVED	5,950
PERCENT SERVED	99.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.000 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	88.400	2.851	6.400	8.500	98.0	5.7	94	8.1	197.5	17.5	91	15.9	6.9	.6	90	.558
FEB	66.700	2.300	2.800	4.300	122.5	21.0	82	6.7	235.0	54.0	77	12.0	7.4	1.1	85	.420
MAR	94.300	3.040	6.900	8.500	115.0	13.0	88	9.6	222.5	26.0	88	18.5	6.9	.7	88	.579
APR	114.800	3.826	6.200	8.400	68.0	5.5	91	7.1	120.0	17.7	85	11.7	6.3	.7	88	.639
MAY	86.100	2.777	3.400	5.600	135.0	6.5	95	11.0	215.0	16.2	92	17.1	7.4	.5	92	.586
JUN	75.000	2.500	3.100	8.400	90.0	10.0	88	6.0	195.0	17.6	90	13.3	7.1	.6	91	.490
JUL	71.300	2.300	4.800	8.400	190.0	4.7	97	13.2	295.0	13.0	95	20.1	9.9	.7	92	.655
AUG	63.100	2.035	2.300	6.900	390.0	11.0	97	23.9	365.0	13.0	96	22.2	8.0	.6	92	.467
SEP	69.200	2.306	3.300	8.400	197.5	4.0	97	13.3	307.5	13.6	95	20.3	8.5	.9	89	.525
OCT	75.200	2.425	3.100	6.800	160.0	4.2	97	11.7	193.0	10.6	94	13.7	6.9	.7	88	.459
NOV	69.600	2.320	2.700	4.900	84.5	4.2	94	5.5	175.0	8.5	95	11.5	6.3	.7	87	.383
DEC	86.600	2.793	5.700	8.500	82.0	13.0	84	5.9	175.0	15.8	90	13.7	8.6	.8	90	.675
TOTAL	960.300							122.5				190.4				6.436
AVERAGE		2.623			144.3	8.5	94		224.6	18.6	91		7.5	.7	89	
MAXIMUM			6.900	8.500												
NO. OF SAMPLES					20	20			20	252			20	261		

DESIGN DATA - METRIC

HALDIMAND (CALEDONIA)

Project: Haldimand-Norfolk Caledonia WPCP

Project No: 2-1009-75

Treatment: Conventional Secondary

Design Flow: 2.273 $10^3 m^3/d$

PRIMARY TREATMENT

RAW SEWAGE PUMPING (at plant)

Type: Two, CHICAGO PUMP
Size: each .054 l/s @ 8.5m TDH

Type: One, SMART TURNER 3HYVBS
Size: 37.85 l/s @ 8.2m TDH

Type: One, CHICAGO PUMP UWLMB4
Size: 25.132 l/s @ 8.2m TDH

Comminutors
Type: Two, CHICAGO PUMP

Bar Screen
Location: in bypass channel

Grit Channels
Size: Two, each 6.1m x 0.5m x .45m awd
Volume (each): 1.491 m^3
Retention: 0.9 min (one)

Primary Clarifiers
Size: One, 5.2m x 14.6m x 2.8m awd
Volume: 187.295 m^3

Size: One, 6.1m x 6.1m x 3.05m awd
Volume: 113.650 m^3
Retention: (both): 3.2 hr

Raw Sludge Pumps
Type: Two, CHICAGO PUMPS VTXH 44091
Size: each, 6.283 l/s @ 6.1m TDH

Type: One, CHICAGO PUMPS HBBLMC4
Size: 3.785 l/s @ 12.8m TDH

SECONDARY TREATMENT

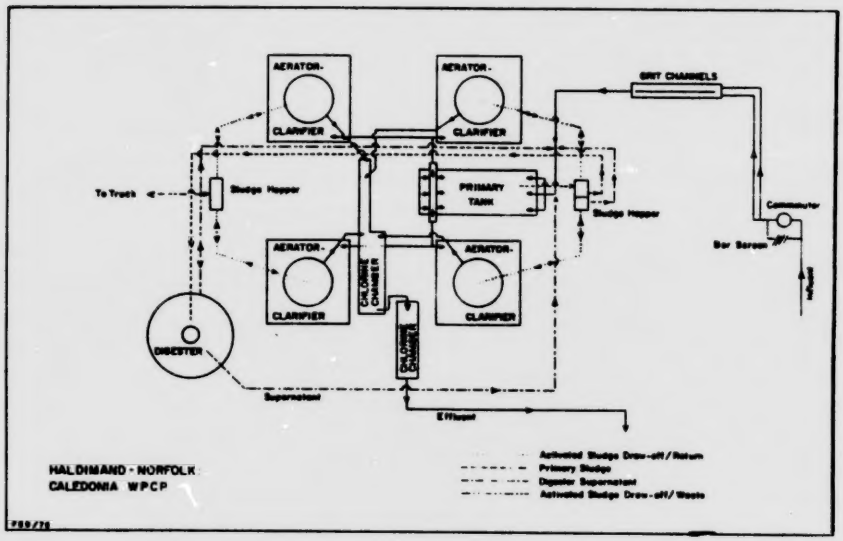
Aerator-Clarifiers
Type: Rectangular clarifier
Size: Four, each 9.1m x 9.1m x 3.2m
Volume (total): 31.822 m^3
Retention (total): 11.3 hr.

Chlorination

Contact Chamber
Size: One, 7.3m x 2.6m x 1.6m
Volume: 31.822 m^3
Retention: 20 min.

Chlorinator
Type: W and T LD 6069

Digester (unheated)
Size: One, 9.1 dia x 5.2m awd
Volume: 363.68 m^3



DESIGN DATA - IMPERIAL

Project: Haldimand-Norfolk Caledonia WPCP

Project No: 2-1009-75

Treatment: Conventional Secondary Sludge

Design Flow: 0.5 M.I.G.D.

PRIMARY TREATMENT

RAW SEWAGE PUMPING (at plant)

Type: Two, CHICAGO PUMP
Size: each 1038 IGPD @ 28' TDH

Type: One, SMART TURNER 3HTVBS
Size: 500 IGPH @ 27' TDH

Type: One, CHICAGO PUMP UWLMB4
Size: 332 IGPH @ 27' TDH

Comminutors
Type: Two, CHICAGO PUMP

Bar Screen
Location: in bypass channel

Grit Channels
Size: Two, each 20' x 1.75' x 1.5' awd
Volume (each): 328 I.G.
Retention: 0.9 min (one)

Primary Clarifiers:
Size: One, 17' x 48' x 8.1' awd
Volume: 41,200 I.G.

Size: One, 20' x 20' x 10' awd
Volume: 25,000 I.G
Retention: (both): 3.2 hr.

Raw Sludge Pumps
Type: Two, CHICAGO PUMPS VTXH 44091
Size: each, 83 I.G.P.M. @ 20' TDH

Type: One, CHICAGO PUMPS HBBLMC4
Size: 50 I.G.P.M. @ 42' TDH

SECONDARY TREATMENT

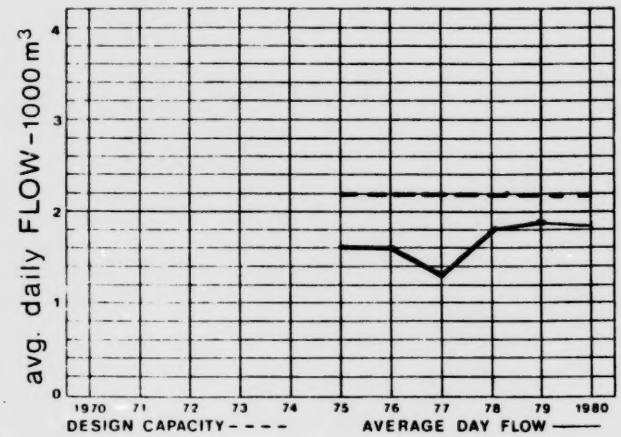
Aerator-Clarifiers
Type: Rectangular clarifier
Size: Four, each 30' x 30' x 10.5'
Volume (total): 236,000 I.G.
Retention (total): 11.3 hr

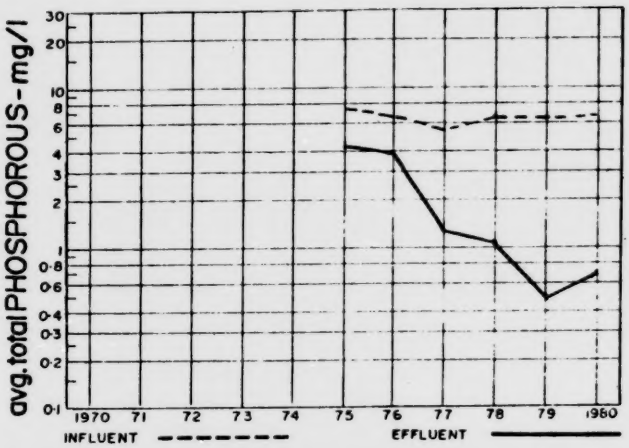
Chlorination

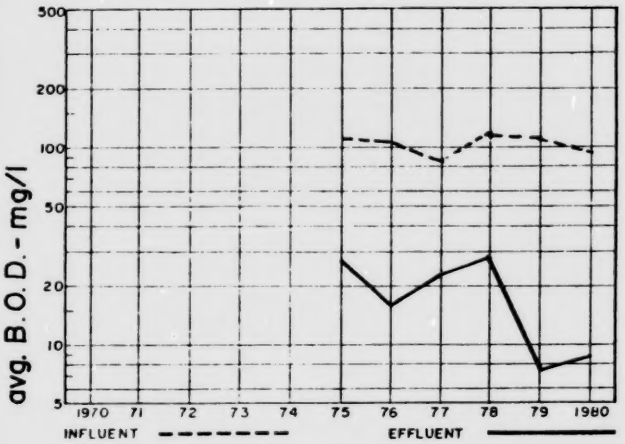
Contact Chamber:
Size: One, 24' x 8.5' x 5.5'
Volume: 7,000 I.G.
Retention: 20 min.

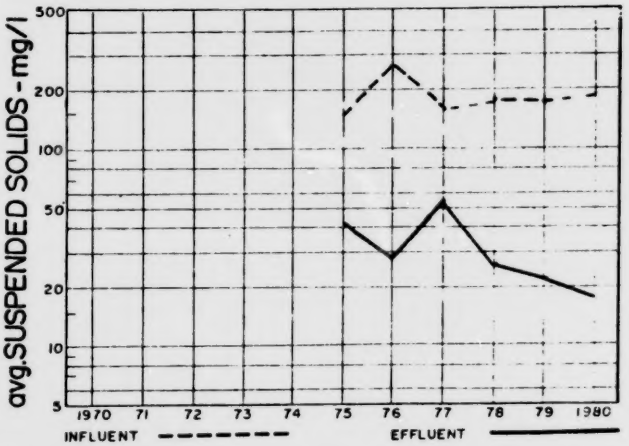
Chlorinator:
Type: W and T LD 6069

Digester (unheated)
Size: One, 30' dia. x 17' awd
Volume: 80,000 I.G.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120001452 CALEDONIA PLANT

MUNICIPALITY : HALDIMAND (CALEDONIA)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 16,427
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 2.273 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	58.700	1.900	4.440	4.550	80.0	6.0	92	4.3	133.0	16.0	87	6.8	5.5	.4	91	.296
FEB	47.320	1.630	2.110	4.410	118.0	8.0	93	5.2	195.0	26.0	86	7.9	7.8	.6	91	.339
MAR	71.860	2.320	4.900	9.100	83.0	6.5	92	5.4	160.0	28.5	82	9.4	5.3	1.2	77	.295
APR	84.780	2.830	4.570	4.550	82.0	9.0	89	6.1	150.0	25.0	83	10.5	5.8	.5	91	.449
MAY	57.280	1.850	2.420	4.090	92.0	13.2	85	4.5	160.0	15.0	90	8.3	5.9	.4	92	.313
JUN	54.120	1.800	2.950	4.550	115.0	4.0	96	6.0	385.0	13.0	96	20.1	9.8	.3	96	.513
JUL	54.890	1.770	2.540	4.550	60.0	9.2	84	2.7	130.0	19.0	85	6.0	7.3	3.4	52	.210
AUG	49.040	1.580	2.020	5.000	84.0	4.0	95	3.9	105.0	12.0	88	4.5	4.8	.3	92	.218
SEP	50.270	1.680	3.540	4.550	88.0	16.0	81	3.6	168.0	17.0	89	7.5	6.9	.7	89	.312
OCT	49.470	1.600	2.880	4.550	133.0	6.7	94	6.2	215.0	11.0	94	10.0	6.5	.3	94	.303
NOV	48.430	1.610	1.970	4.370	52.0	11.0	78	1.9	160.0	15.0	90	7.0	6.0	.4	92	.269
DEC	55.450	1.850	3.130	4.550	126.0	10.0	92	6.4	222.0	15.0	93	11.4	7.5	.5	93	.388
TOTAL	681.610							56.7				110.1				3.905
AVERAGE		1.868			92.7	8.6	90		181.9	17.7	90		6.5	.7	88	
MAXIMUM			4.900	9.100												
NO. OF SAMPLES					22	22			22	53			22	22		

DESIGN DATA - METRIC

HALDIMAND (HAGERSVILLE)

PROJECT: Haldimand-Norfolk (Hagersville) WPCP

PROJECT NO.: 1-1001-72 TREATMENT: Conventional Secondary

DESIGN FLOW: 0.909 $10^3 m^3/d$

PUMPING STATIONS:

Parkview & Mud St. P.S.
Type: Smith & Loveless
Pumps: Two, S & L 4B2
delivering 20.44 l/s @ 7.6m TDH

Mary Street P.S.
Type: Smith & Loveless
Pumps: Two, Allis Chalmers 300F7M1
delivering 15.90 l/s @ 6.2m TDH

Tuscarora St.
Type: built on site
Pumps: One, Smart Turner
495382-2-1/2HXVS
(with identical unit as stand-by)

BAR SCREEN
Bars: 3.8 cm x0.64 cm

COMMINUTOR
Type: One Procor C785
Size: 10R, 45 r/min

RAW SEWAGE PUMPS
Type: Two, Smart Turner 3HYVBT
Size: 18.93 l/s @ 6.1m TDH

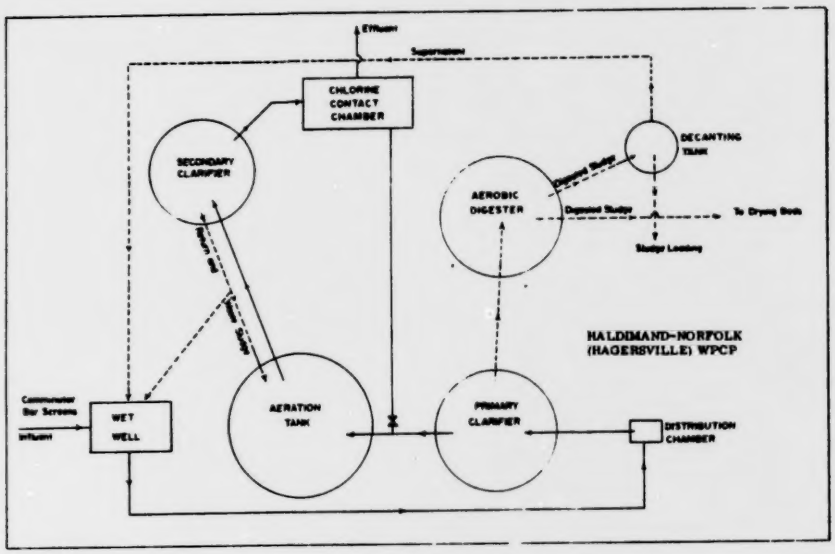
PRIMARY CLARIFIER
Size: circular, 7.7m dia. x 3.1m swd
139.11 m^3
Retention: 2.9 hr.
Loading-surface: 24.93 $m^3/m^2 \cdot d$

AERATION TANK
Size: circular, 11.0m dia. x 2.4m swd
230.94 m^3
Retention 4.8 hr.
Mechanism: 'Vortair' Mechanical

SECONDARY CLARIFIER
Size: circular, 7.3m dia. x 2.7m swd
115.47 m^3
Retention: 2.4 hr.
Loading-surface: 26.94 $m^3/m^2 \cdot d$

CHLORINE CONTACT CHAMBER
Size: 1.8m x 5.7m x 2.1m
18.64 m^3
Retention: 25 min.

SLUDGE DRYING BEDS
Area: 706.0 m^2



DESIGN DATA - IMPERIAL

PROJECT: Haldimand-Norfolk (Hagersville) WPCP

PROJECT NO. 1-1001-72

DESIGN FLOW: 0.2 MIGD

PUMPING STATIONS:

Parkview & Mud St. P.S.
Type: Smith & Loveless
Pumps: Two, S & L 4B2
delivering 270 gpm @ 25'TDH

Mary Street P.S.
Type: Smith & Loveless
Pumps: Two, Allis Chalmers 300F7M1
delivering 252 USgpm @ 20'TDH

Tuscarora St.
Type: built on site
Pumps: One, Smart Turner
495382-2-1/2HXVS
(with identical unit as stand-by)

BAR SCREEN
Bars: 1½" x ¼"

COMMINUTOR
Type: One Procor C785
Size: 10R, 45 RPM

RAW SEWAGE PUMPS
Type: Two, Smart Turner 3HYVBT
Size: 250 Igpm @ 20' TDH

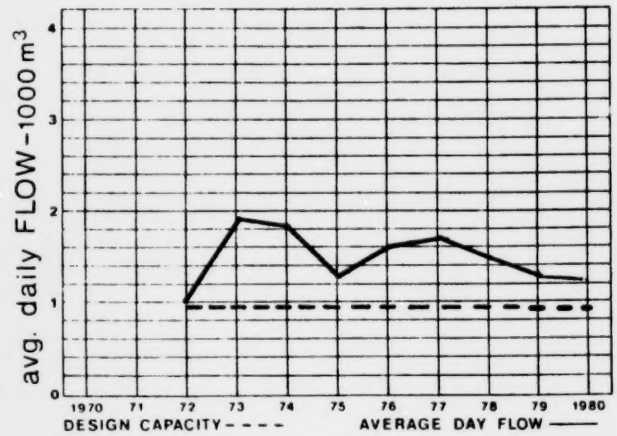
PRIMARY CLARIFIER
Type: circular, 25'dia. x 10'swd
Size: 30600 I.G.
Retention: 2.9 hr
Loading-surface: 510 I.gal/ft^2/day

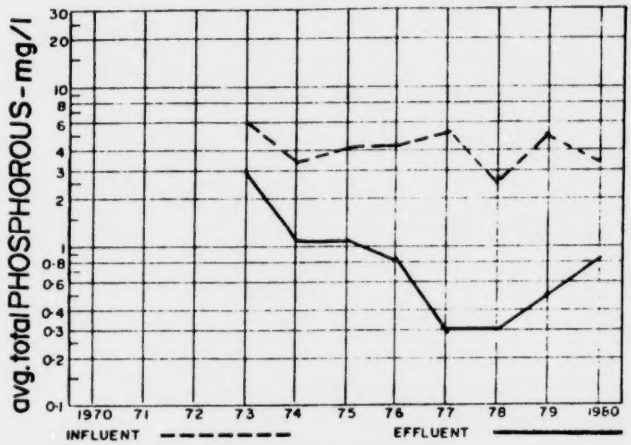
AERATION TANK
Type: circular, 36' dia. x 8'swd
Size: 50,800 I.G.
Retention: 4.8 hr.
Mechanism: 'Vortair' Mechanical

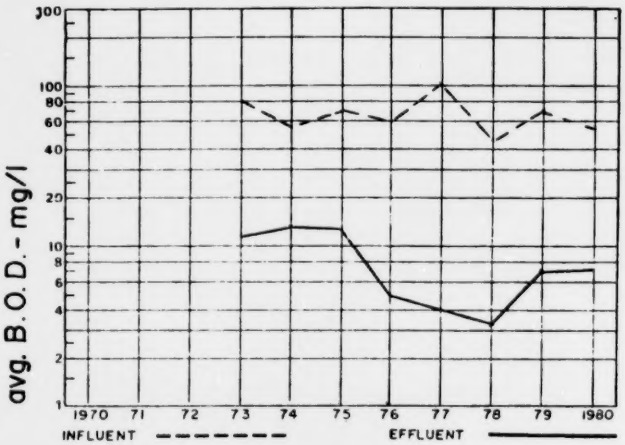
SECONDARY CLARIFIER
Type: circular 24' dia x 9'swd
Size: 25,400 I.G.
Retention: 2.4 hr
Loading-surface: 551 I.G./ft^2/day

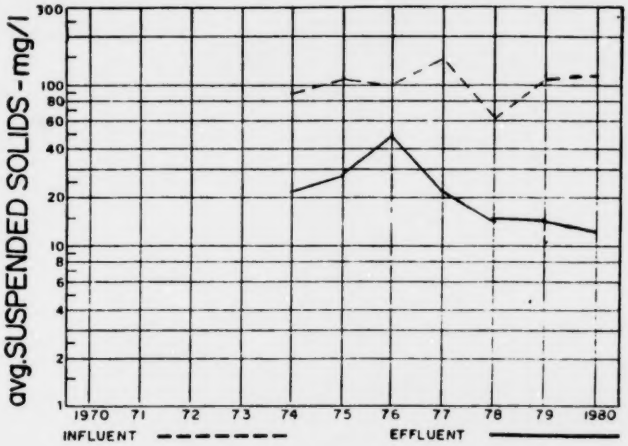
CHLORINE CONTACT CHAMBER
Size: 6' x 15.5' x 7'
4100 I.G.
Retention: 25 min

SLUDGE DRYING BEDS
Area: 7600 ft^2









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001024 HAGERSVILLE MPCP

MUNICIPALITY : HALDIMAND (HAGERSVILLE)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 16,427
POPULATION SERVED : 2,450
PERCENT SERVED : 14.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	41.790	1.348	2.150		68.0	2.3	96	2.7	76.6	7.0	90	2.9	4.5	.2	94	.178
FEB	32.536	1.138	1.495		76.0	6.0	92	2.2	105.0	8.0	92	3.1	4.8	.2	94	.148
MAR	47.699	1.538	2.108		42.0	1.0	97	1.9	40.0	7.0	82	1.5	2.7	.1	94	.121
APR	53.075	1.769	2.380		33.0	13.3	59	1.0	60.0	52.5	12	.3	1.8	2.1	-	-
MAY	39.434	1.271	2.282		57.5	4.5	92	2.0	72.5	7.5	89	2.5	3.4	.1	95	.127
JUN	38.548	1.284	2.234		75.0	9.2	87	2.5	675.0	8.5	98	25.6	5.4	.2	95	.199
JUL	30.536	.985	1.638		68.0	5.7	91	1.9	120.0	7.0	94	3.4	4.3	.9	77	.103
AUG	30.483	.983	1.708		87.0	6.0	93	2.4	140.0	9.0	93	3.9	4.4	.6	85	.115
SEP	34.485	1.149	2.359		28.0	12.0	57	.5	34.0	21.0	38	.4	2.2	.8	63	.048
OCT	36.317	1.172	2.151		33.5	12.7	61	.7	45.0	17.5	61	.9	2.8	.8	69	.071
NOV	39.721	1.324	1.820		48.0	10.5	78	1.4	60.0	15.0	75	1.7	2.6	.4	81	.085
DEC	45.512	1.468	2.276		45.0	6.2	86	1.7	65.0	13.5	79	2.3	2.4	2.9	-	-
TOTAL	470.136							21.5				49.3				1.195
AVERAGE		1.286			55.0	7.4	86		124.4	14.4	88		3.4	.8	76	
MAXIMUM			2.380													
NO. OF SAMPLES					23	23			23	23			23	22		

DESIGN DATA - METRIC

KITCHENER

PROJECT: City of Kitchener WPCP

PROJECT NO.: 1-0314-72

TREATMENT: Conventional Secondary

DESIGN FLOW: 122.74 $10^3 m^3/d$

RAW SEWAGE - BOD 275 mg/l
- SS 300 mg/l

PRIMARY TREATMENT

Screening
Type: Three (incl. one standby) mechanically cleaned bar screens by Dorr-Oliver-Long. Set in concrete channels 1.5m x 1.1m deep at 75° incline.
Size: Bars are 9.5 mm thick 50.8mm wide with 25.4mm clear between bars.

Grit Removal
Type: Two Detritor tanks
Size: 3.25m² x 762mm deep
Volume: 113.906 $103 m^3/d$

Primary Clarifiers
Size: Four 57.9m x 19.8m x 3.7m swd
Volume: 4160.208 m^3/tank

SECONDARY TREATMENT

Aeration Tanks
Size: 8 Concrete cells 6.04m² with 4.7m swd with mixed liquor
Volume: 1755.84 m^3 each
Size: 4 tanks 64.0m x 18.3m x 4.0m deep
Volume: 19.093 m^3 total
Type: Ames Crosta Aerators

Secondary Clarifiers
Type: 4 tanks with Dorr-Oliver Sludge collector type RSR
Size: 33.5m dia. x 3.05m swd
Size: 4 tanks 24.4m dia. with 3.05m wd
Retention: 2.4 hours
Loading: Surface - 32.85 $m^3/m^2 \cdot d$
Weir - 199.66 $m^3/m \cdot d$

Primary Digesters
Size: Two 19.8m dia. x 6.7m swd
Volume: 4078.08 m^3
Loading: 11.0 $kg/m^3 \cdot d$
Size: Two 33.5m dia. x 7.6m swd
Volume: 13,452 m^3
Loading: 1.84 $kg/m^3 \cdot d$

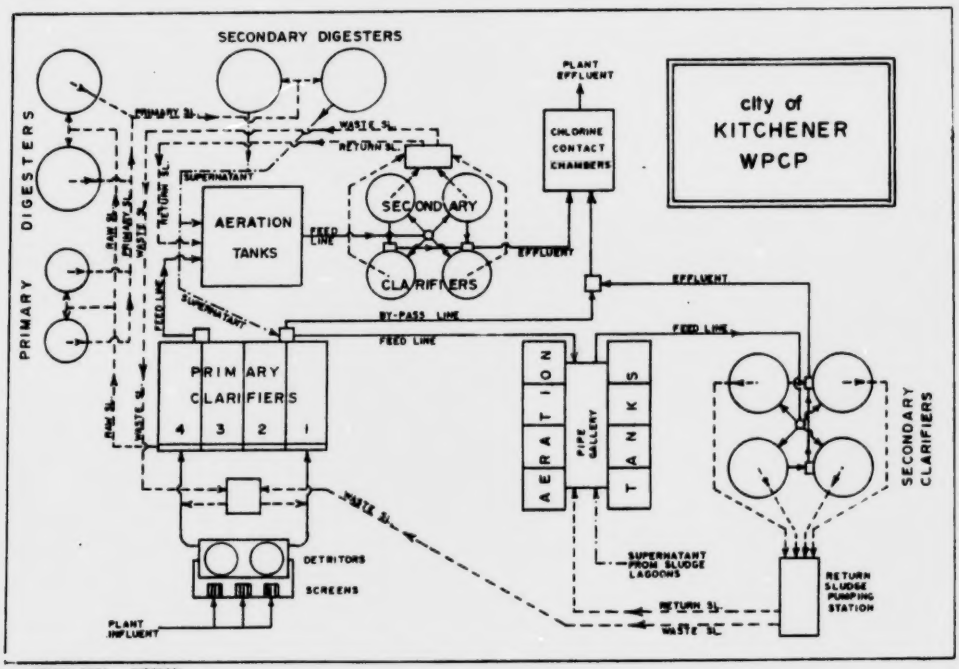
Secondary Digester
Type: Dorr, floating cover
Size: Two 19.8m dia. x 6.7m swd
Volume: 11,328 m^3
Loading: 2.96 kg/m^3/month

Vacuum Filter
Type: Konline - Sanderson
Size: 46.5 m^2 (one only)

Sludge Lagoon
Area: 6.5 ha

Sand Filter
Size: Ten 4.9m x 30.5m = 1486.4 m^2

Chlorination
Volume: One contact chamber 641.0m^3
Retention: 15 min.
Volume: One contact chamber 2050.2 m^3
Retention: 15 min.



DESIGN DATA - IMPERIAL

PROJECT	City of Kitchener WPCP
PROJECT NO. previously	1-0314-72 2-0019-58
TREATMENT	Conventional Secondary
DESIGN FLOW	27 MIGD
RAW SEWAGE	BOD 275 mg/l SS 300 mg/l

PRIMARY TREATMENT

Screening

- Three (incl. one standby) mechanically cleaned bar screens by Dorr-Oliver-Long. Set in concrete channels 5' wide x 3.5' deep @ 75° incline. Bars are 3/8" thick 2" wide with 1" clear between bars.

Grit Removal

Two detritor tanks 35' square x 30" deep. 28(U.S.) MGD.

Primary Clarifiers

- Four, 190' x 65' x 12' SWD 146,900 ft^3/tank.

SECONDARY TREATMENT

Aeration Tanks

- 8 Concrete cells 65' square with 15'-6" SWD with mixed liquor volume 62,000 ft^3ea.
- 4 tanks 210'x60'x13'-3" deep (total 4.2 million gallons).
- Ames Crosta Aerators.

Secondary Clarifiers

- 4 tanks 110' dia. with 10' SWD with Dorr-Oliver Sludge collector type RSR.
- 4 tanks 80' dia. with 10' SWD. 2.4 hrs. retention. Surface loading 672 gal/ft^2/day. Weir Loading 13,400 gal/ft^2/day.

Primary Digesters

- Two 65' dia. x 22' SWD (144,000 ft^3 or 0.9 mg.) loading 1.08 lb/Cu. Ft./day
- Two 110' dia. x 25' SWD (475,000 ft^3 or 3.0 mg) loading 0.18 lb/Cu. Ft./day.

Secondary Digester

- Two 100' dia. x 29' SWD (400,000 ft^3 or 2.5 mill. gall.) loading 0.29 lb/ft^3/mo. type: Dorr, floating cover.

Vacuum Filter

Type: Konline - Sanderson
Size: 500 sq. ft. (one only).

Sludge Lagoon

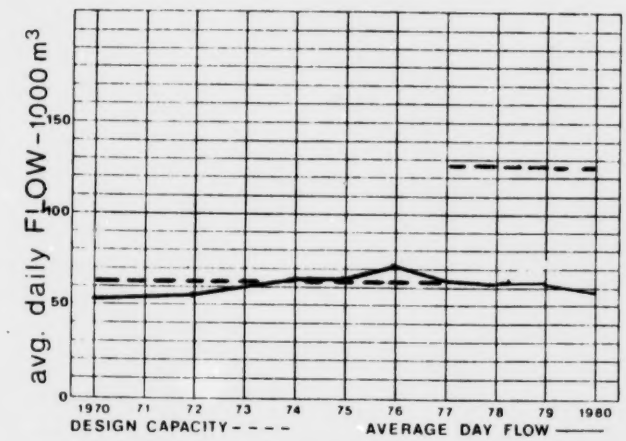
Area: 16 acres.

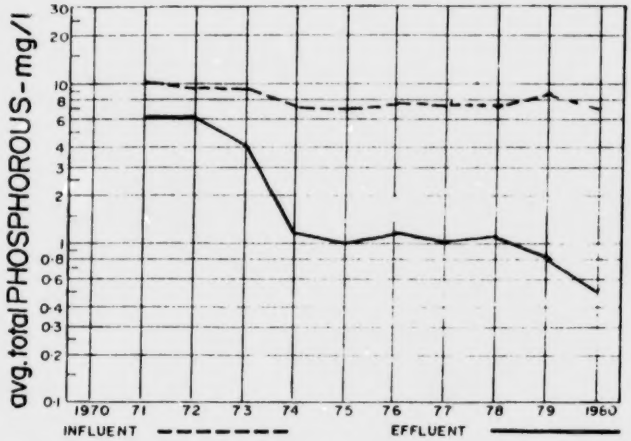
Sand Filter

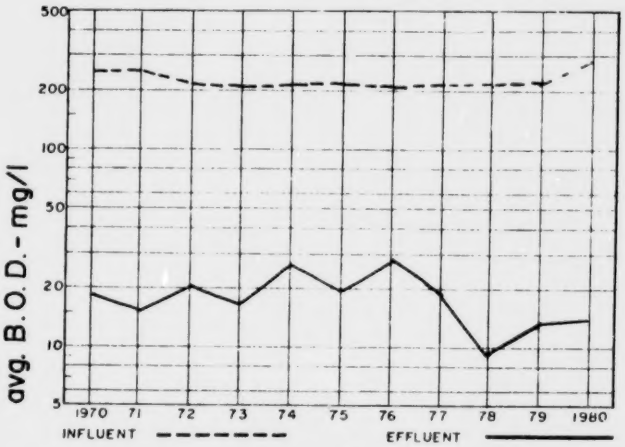
Ten - 16' x 100' = 16,000 sq. ft. with automatic backwash.

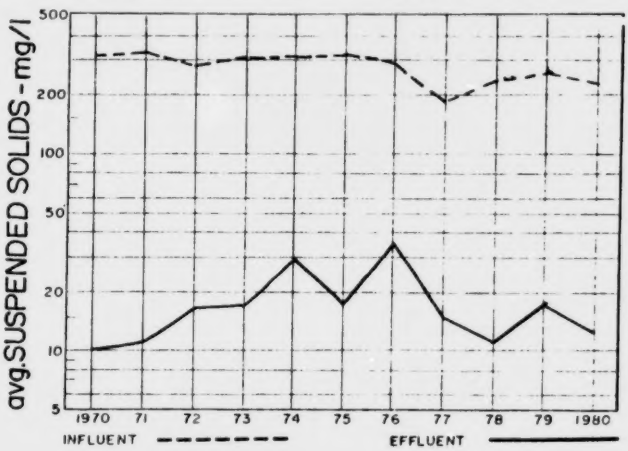
Chlorination

- One contact chamber 141,000 gallons with 15 min retention.
- One contact chamber 451,000 gallons with 15 min. retention.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000374 KITCHENER M P C P

MUNICIPALITY : KITCHENER
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 135,288
POPULATION SERVED : 39,000
PERCENT SERVED : 28.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 122.742 1000 M3 DESIGN BOD5 : 275.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	1852.540	59.760	94.920	163.000	193.0	12.0	93	335.3	239.0	11.6	95	421.1	6.7	.8	86	10.747
FEB	1763.710	60.820	73.060	91.000	215.0	9.5	95	362.4	257.8	15.8	93	426.7	7.3	.5	91	11.833
MAR	1723.480	55.596	109.420	191.000	175.8	22.0	87	265.2	226.9	17.2	92	361.4	7.7	.5	92	12.288
APR	1822.960	60.765	76.600	136.000	205.0	2.5	98	369.1	231.0	10.5	95	401.9	8.1	.4	95	14.037
MAY	1640.610	54.680	64.780	95.000	208.7	48.0	77	263.6	231.2	15.8	93	353.3	7.4	.6	91	11.091
JUN	1616.240	53.870	76.740	91.000	309.0	20.0	93	467.0	221.0	10.7	95	339.8	7.9	.4	93	12.041
JUL	1956.007	63.097	68.870	136.000	392.0	7.5	98	752.0	213.0	6.5	96	403.9		.4		
AUG	2018.280	65.100	80.180	91.000	372.0	16.0	95	718.5	252.0	10.7	95	487.0	7.5	.8	88	13.401
SEP	1888.863	62.960	78.000	86.000	310.0	5.5	98	575.1	238.0	6.0	97	438.2	8.6	.8	90	14.639
OCT	1857.770	59.920	70.520	91.000	301.9	3.5	98	554.3	256.3	5.9	97	465.1	7.2	.4	95	12.466
NOV	1858.610	61.950	75.700	91.000	369.0	9.5	97	668.1	239.0	5.5	97	433.9	7.5	.4	94	13.122
DEC	1801.900	58.130	82.310	127.000	291.0	3.5	98	518.0	245.0	7.0	97	428.8	8.1	.5	93	13.694
TOTAL	21800.970							5849.1				4961.7				139.359
AVERAGE		59.721			278.5	13.2	95		237.5	10.2	95		7.6	.5	92	
MAXIMUM			109.420	191.000												
NO. OF SAMPLES					99	110										

DESIGN DATA - METRIC

Project No:	1-0216-69
Treatment:	High Rate Activated Sludge
Design Flow:	0.681 $10^3 m^3$/d (estimated)
Design BOD:	176 mg/l
Design SS:	160 mg/l

PRETREATMENT

RAW SEWAGE PUMPING
1, centrifugal pump

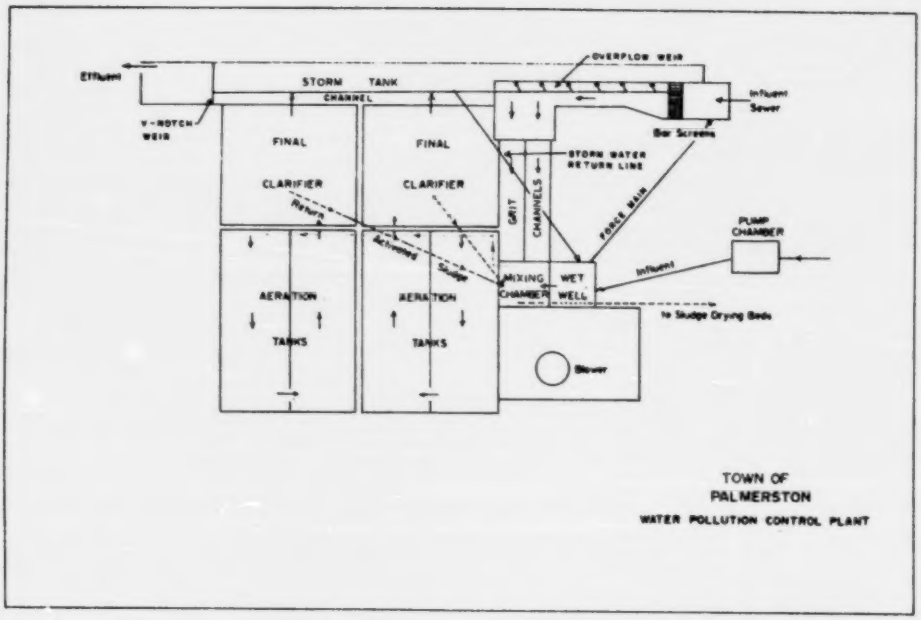
GRIT REMOVAL:
Two grit channels each 4.9 m x 0.6 m x 1.2 m
Volume (each) 3,727 m^3 Detention (each) 3.5 min.

SCREENING:
Bar screens at influent sewer

BIOLOGICAL TREATMENT:

AERATION TANKS:
Four, each 8.5 m x 2.3 m x 2.6 m
Volume (total) 200.9 m^3
Detention: 3.2 hours
Blower 1, size 1604 m^3/s at 55 kPa

FINAL CLARIFIERS:
Two, each 4.7 m x 4.7 m Hopper Bottom
Volume (total) 127 m^3
Detention: 2.0 hours
Overflow rate: 34.23 m^3/m^2 x d



DESIGN DATA - IMPERIAL

Project No:	1-0216-69
Treatment:	High Rate Activated Sludge
Design Flow:	0.34 MIGD (estimated)
BOD:	Raw sewage 76 mg/l (estimated)
SS:	Raw sewage 60 mg/l (estimated)

PRETREATMENT

RAW SEWAGE PUMPING:
1, centrifugal pump

GRIT REMOVAL:
Two grit channels, each 16' x 2' x 1.1'
Volume (each) 420 I. Gal Detention (each) 3.5 min.

SCREENING:
Bar screens at influent sewer

BIOLOGICAL TREATMENT:

AERATION TANKS:
Four, each 28' x 7.6' x 8.3'
Volume (total) 44, 200 I. Gal.
Detention: 3.2 hours
Blower 1, size 340 cfm at 8 psi

FINAL CLARIFIERS:
Two, each 15.6' x 15.6' Hopper Bottom
Volume (total) 28, 000 I. Gal.
Detention: 2.0 hours
Overflow rate: 700 gal/ft^2/day

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001088 PALMERSTON W P C P

MUNICIPALITY : PALMERSTON
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY NO PRIMARY CLARIFIERS

CURRENT POPULATION : 1,987
POPULATION SERVED : 2,050
PERCENT SERVED : 103.1

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.681 1000 M3 DESIGN BOD5 : 176.0 MG/L DESIGN SUSP.SOLIDS : 160.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80 *																
JAN					*	*			*	*			*	*		
FEB	FLOW				40.0	7.0	82		55.0	15.0	72		4.6	2.2	52	
MAR	METER				30.0	39.0	-		30.0	30.0			3.4	2.9	14	
APR					*	*			*	*			*	*		
MAY	OUT				13.0	14.0	-		20.0	15.0	25		1.6	1.8	-	
JUN	OF					12.0				25.0				2.6		
JUL					*	*			*	*			*	*		
AUG	ORDER				38.0	12.0	68		100.0	35.0	65		3.5	1.5	57	
SEP					85.0	40.0	52		100.0	55.0	45		6.0	4.8	20	
OCT					56.0	10.0	82		35.0	8.0	77		3.0	2.0	33	
NOV					55.0	19.0	65		70.0	30.0	57		3.0	2.0	33	
DEC					41.0	19.0	53		200.0	30.0	85		.8	.8		
TOTAL																
AVERAGE					44.7	19.1	57		76.2	27.0	64		3.2	2.2	29	
MAXIMUM																
NO. OF SAMPLES					8	9			8	9			8	9		

WATERLOO

DESIGN DATA - METRIC

PROJECT: City of Waterloo

PROJECT No. 2-0022-58
2-0203-66
1-0350-73

DESIGN DATA

Design Flow 45.46 10^3m^3/d Peak - 113.65 10^3m^3/d
Design Population 63,500

BOD Raw Sewage 270 mg/l
Removal 95%
SS Raw Sewage 270 mg/l
95%

PRIMARY TREATMENT

Comminution:
TYPE: Worthington
Two 79.56 10^3m^3/d

SEWAGE LIFT STATION:

Type: Fairbanks Morse
Three 441.7 l/s @ 13.7m TDH
Type: Canada Pump
Two 219.5 l/s @ 9.75 m TDH
One 378.5 l/s

GRIT REMOVAL

Type: Dorr Oliver Long Detritors
Two 4.27 m x 4.27 m x 0.49 m(17.72 m^3)
Retention 0.94 min.
One 7.92m x 7.92m x 0.70m
Max Flow 66.37 10^3m^3/d

PRIMARY SEDIMENTATION:

Type: Dorr Oliver Long
Two 22.9m Diameter x 4.0m s.w.d
Retention 3.510 10^3m^3 @ 3.09 hrs.
Loading Surf: 33.24 m^3/m^2/d
Weir: 189.23 m^3/m x d
Two 22.9 m Diameter x 3.05 m
Retention: 2.73 10^3m^3 @ 2.6 hrs
Loading Surf 2444.4 g/ft^2 x d
Weir 134.1 m^3/m x d

SECONDARY TREATMENT

A. Aeration Tanks:

Types: Diffused air, single pass with turbine aerators
Four 40.8m x 9.0m x 4.7m
Retention: 7.637 10^3m^3 @ 6.7 hrs.
Diffusers:
a) Spargers (66 Per Tank)
b) Lightnin Turbine (3 per Tank)
Air Supply
Type: Sutorbilt
Two 1567.1 l/s

AERATION TANKS

Type: Mechanical Aeration
Two 47.7m x 11.6m x 5.3m
Retention: 5.91 10^3m^3 @ 7.78 hr.
(At Design 18.18 Flow)
Aerators: Eight Ames Costra

SECONDARY SEDIMENTATION

Type: Dorr Oliver Long

A. Two 19.8m Diameter x 3.05 m s.w.d
One 27.4m Diameter x 3.05 m s.w.d
Retention: 3886.83m^3 @ 3.4 hrs.

B. Two 36.5m Diameter x 3.05 m s.w.d
Retention 6.36 m
@ 9.46 hrs. (Avg 18.18 10^3m^3/d)
7.25 hrs. (Peak 68.19 10^3m^3/d)

CHLORINATION:

Type: Wallace and Tiernan
Two 907.2 kg Chlorinators
One Evaporator

OUTFALL

To Grand River

SLUDGE HANDLING

Digestion System:
Two Stage : 2 Primary Digestors
2 Secondary Digestors

A. Primary: Fixed Cover
Three Draft Tubes Dorr Oliver Long
Size: 24.4m Diameter x 6.55 m s.w.d.
Retention: 3.528 10^3m^3
Loading: 35.7 kg/m^2 x mon.

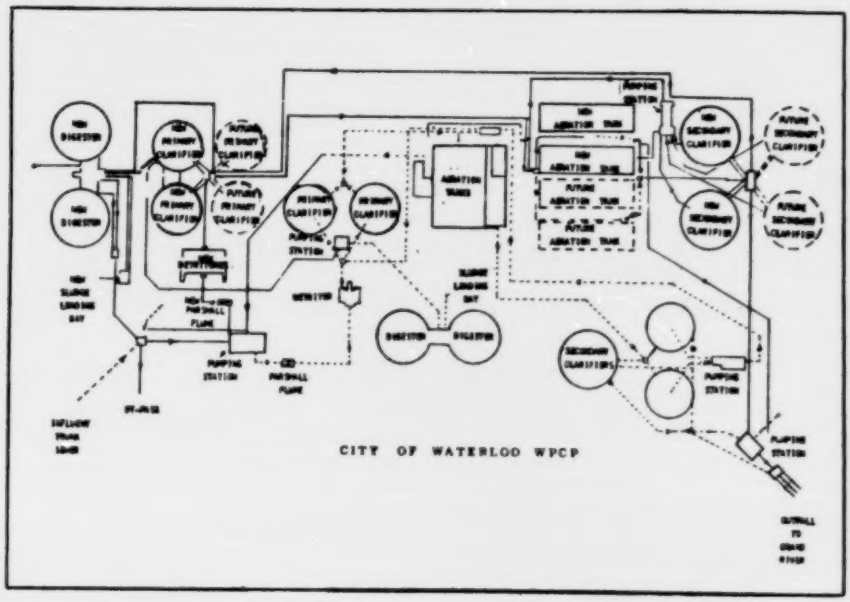
Secondary: Floating Cover
Size: 24.4m Diameter x 6.10m s.w.d.
Retention: 3.319 10^3m^3
Loading: 18.36 kg/m^2 x mon.

B. Primary: Fixed Cover
Five Gas Guns 0.457 m
Diameter-Floor Mounted
Aero Hydraulic
Size: 30.48 m Diameter x 7.62 m s.w.d.
Retention: 19 days
Loading: 1.28 kg vs/m^3/d

Secondary: Floating Cover
Size: 30.48 m Diameter x 7.62 m s.w.d.
Retention: 19 days

Liquid Sludge Haulage

Vacuum Filter:
Type: Komling Sanderson
Size: 27.87 m^2



WATERLOO

DESIGN DATA - IMPERIAL

PROJECT: City of Waterloo

PROJECT No. 2-0022-58
2-0203-66
1-0350-73

DESIGN DATA

Design Flow 10.0 mlgd Peak - 25.0 mlgd
Design Population 63,500
BOD Raw Sewage 270 mg/l
Removal 95%
SS Raw Sewage 270 mg/l
95%

PRIMARY TREATMENT

Comminution:
TYPE: Worthington
Two 17.5 mlgd

SEWAGE LIFT STATION:

Type: Fairbanks Morse
Three 7000 usgpm @ 45' tdh
Type: Canada Pump
Two 2900 gpm @ 32' tdh
One 5000 gpm

GRIT REMOVAL

Type: Dorr Oliver Long Detritors
Two 14' x 14' x 1.6' 3900 g.
Retention 0.94 min.
One 26' x 26' x 2.3'
Max Flow 14.6 mlgd

PRIMARY SEDIMENTATION:

Type: Dorr Oliver Long
Two 75' Diameter x 13' swd
Retention 0.772 mg. 3.09 hrs.
Loading Surf: 680 g/ft^2/day
Weir: 12,700 g/ft/day
Two 75' Diameter x 10' swd
Retention: 0.6 mg. @ 2.6 hrs.
Loading Surf 500 g/ft^2/day
Weir 9000 g/ft/day

SECONDARY TREATMENT

A. Aeration Tanks:

Types: Diffused air, single pass with turbine aerators
Four 134' x 32.5' x 15.5'
Retention: 1.68 mlg @ 6.7 hrs.
Diffusers:
a) Spargers (66 Per Tank)
b) Lightnin Turbine (3 per Tank)
Air Supply:
Type: Sutorbilt
Two 3,750 cfm

AERATION TANKS

Type: Mechanical Aeration
Two 156.5' x 38' x 17.5'
Retention: 1.3 mlg @ 7.78 hr.
(At Design 4 mlgd Flow)
Aerators: Eight Ames Costra 30 hsp

SECONDARY SEDIMENTATION

Type: Dorr Oliver Long

A. Two 65' Diameter x 10' swd
One 90' Diameter x 10' swd
Retention: 855,000 lg @ 3.4 hrs.

B. Two 120' Diameter x 10' swd
Retention: 1.4 mlg
@ 8.46 hrs. (Avg 4 mlgd)
7.25 hrs. (Peak 15 mlgd)

CHLORINATION:

Type: Wallace and Tiernan
Two 2000 lb Chlorinators
One Evaporator

OUTFALL

To Grand River

SLUDGE HANDLING

Digestion System:
Two Stage : 2 Primary Digestors
2 Secondary Digestors

A. Primary: Fixed Cover
Three Draft Tubes Dorr Oliver Long
Size: 80' Diameter x 21.5' s.w.d.
Retention: 0.776 mlg.
Loading: 3.5 lb/ft^2/mo.

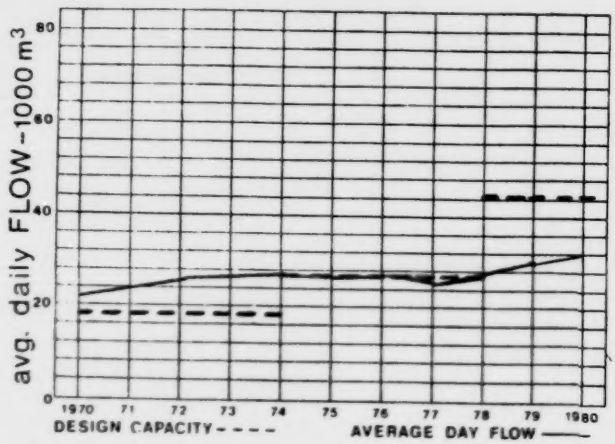
Secondary: Floating Cover
Size: 80' Diameter x 20' s.w.d.
Retention: .73 mlg.
Loading: 1.8 lb/ft^2/mo.

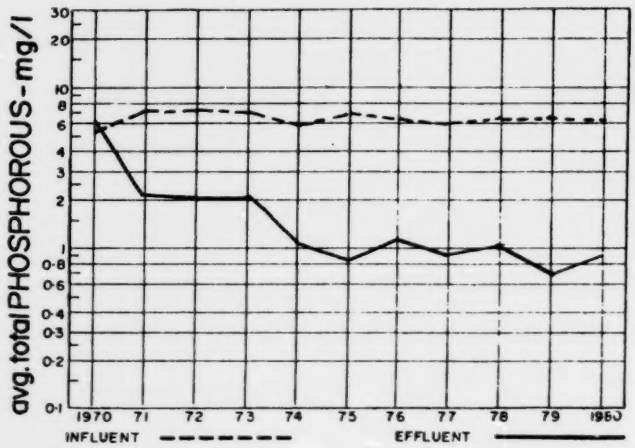
B. Primary: Fixed Cover
Five Gas Guns 1.5'
Diameter-Floor Mounted
Aero Hydraulic
Size: 100' Diameter x 25' s.w.d.
Retention: 19 days
Loading: 1.28 kg vs/m^3/day

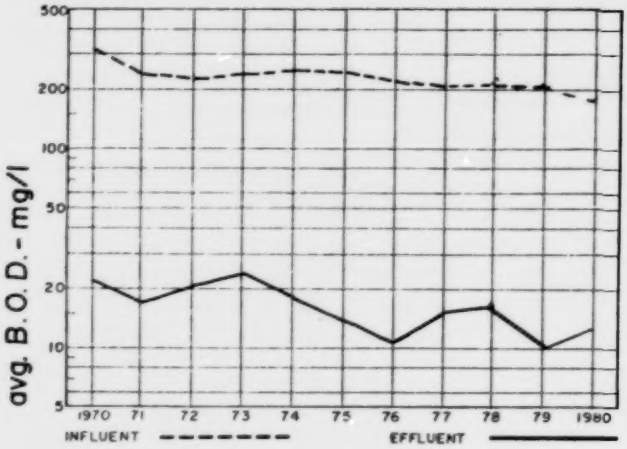
Secondary: Floating Cover
Size: 100' Diameter x 25' s.w.d.
Retention: 19 days

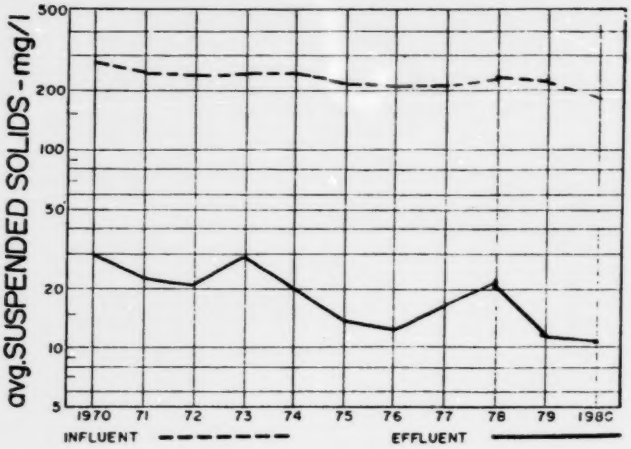
Liquid Sludge Haulage

Vacuum Filter:
Type: Komling Sanderson
Size: 300 ft^2









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000793 WATERLOO MPCP

MUNICIPALITY : WATERLOO
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION	: 50,291
POPULATION SERVED	: 63,000
PERCENT SERVED	: 125.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 45.460 1000 M3 DESIGN BOD5 : 270.0 MG/L DESIGN SUSP.SOLIDS : 270.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	1013.800	32.700	50.400		227.0	10.0	95	219.9	189.0	15.0	92	176.4	6.7	1.0	85	5.779
FEB	879.200	30.300	34.900		173.0	17.0	90	137.1	178.0	12.0	93	145.9	7.0	1.1	84	5.187
MAR	1081.300	34.880	61.800		189.0	12.0	93	191.3	175.0	8.0	95	180.5	6.2	.9	85	5.731
APR	1145.400	38.180	49.400		148.0	16.0	89	151.1	161.0	13.0	91	169.5	5.1	.9	82	4.811
MAY	1088.800	35.120	43.700		213.0	23.0	89	206.8	204.0	22.0	89	198.1	6.1	1.3	78	5.226
JUN	1040.500	34.680	45.000		150.0	11.0	92	144.6	179.0	7.0	96	178.9	5.8	.8	86	5.203
JUL	977.700	31.540	42.800		148.0	11.0	92	133.9	193.0	6.0	96	182.8	5.3	.8	84	4.400
AUG	915.400	29.530	34.100		148.0	13.0	91	123.5	215.0	12.0	94	185.8	6.2	.8	87	4.943
SEP	904.200	30.140	36.100		198.0	11.0	94	169.0	210.0	12.0	94	179.0	6.3	.9	85	4.883
OCT	983.000	31.710	35.100		231.0	11.0	95	216.2	231.0	8.3	96	218.9	6.7	.8	88	5.800
NOV	1096.500	36.550	37.700		247.0	14.0	94	255.4	223.0	8.0	96	235.7	9.0	1.1	87	8.662
DEC	1021.800	32.960	43.500		188.0	12.0	93	179.8	187.0	7.0	96	183.9	6.0	.7	88	5.416
TOTAL	12147.600							2129.4				2235.8				66.041
AVERAGE		33.191			188.3	13.4	92		195.4	10.8	94		6.3	.9	85	
MAXIMUM			61.800													
NO. OF SAMPLES					82	82			238	238			91	213		

DESIGN DATA - METRIC

WOOLWICH (ELMIRA)

PROJECT: Woolwich Twp. (Elmira) WPCP

PROJECT NO.: 2-0096-61

DESIGN FLOW:
Municipal 2.273 $10^3 m^3/d$
Industrial 0.818 $10^3 m^3/d$
Total 3.091 $10^3 m^3/d$

DESIGN POPULATION: 5,000

BOD:
Municipal 170 mg/l
Industrial 1100 mg/l
Combined 420 mg/l

SS:
Municipal 300 mg/l
Industrial 320 mg/l
Combined 306 mg/l

PRETREATMENT -- INDUSTRIAL WASTES

Type --
Balancing tank plus Neutralization facilities

PRIMARY TREATMENT

Screening

One coarse manually cleaned bar screen

Grit Removal

Type: Grit channels, manually cleaned

Primary Sedimentation

Type: Link Belt
Size: Two 12.2m dia. x 2.4m swd
Volume: 568.25 m^3
Retention: 4.42 hours
Loading: Surface, 25.08 $m^3/m^2 \cdot d$
Weir, 40.23 $m^3/m \cdot d$

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical aeration
Size: Four 9.1m x 9.1m x 4.3m
Volume: 1363.8 m^3
Retention: 10.6 hours

Aerators

Type: Four Ames-Crosta

Secondary Sedimentation

Type: Rex Chainbelt
Size: Two 13.7m dia. x 2.1m swd
Volume: 631.89 m^3
Retention: 4.9 hours
Loading: Surface, 10.462 $m^3/m^2 \cdot d$
Weir, 35.76 $m^3/m \cdot d$

CHLORINATION

Type: F & P

Chlorine Contact Chamber

Size: Two 9.1m x 1.8m x 1.4m
Volume: 48.188 m^3
Retention: 22.5 min.

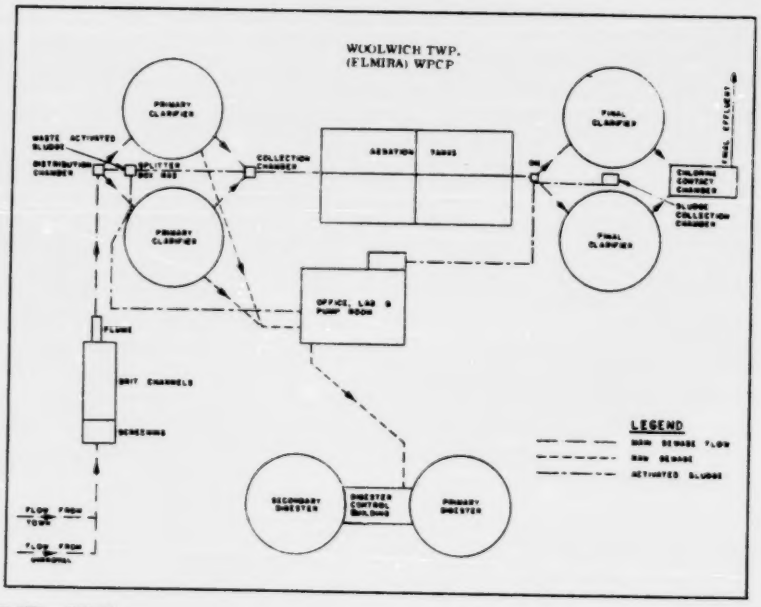
OUTFALL

- to Canangagique Creek

SLUDGE HANDLING

Digestion System

Type: Two-stage digestion
Primary - One 9.1m tank with two Dorr mixers (441.42 m^3)
Secondary - One 9.1m dia. tank (430.51 m^3)



DESIGN DATA - IMPERIAL

PROJECT NO. 2-0096-61

DESIGN FLOW
Municipal 0.50 mgd
Industrial 0.18 mgd
Total 0.68 mgd

DESIGN POPULATION 5,000

BOD -
Municipal 170 mg/l
Industrial 1100 mg/l
Combined 420 mg/l

SS -
Municipal 300 mg/l
Industrial 320 mg/l
Combined 306 mg/l

PRETREATMENT -- INDUSTRIAL WASTES

Type --
Balancing tank plus neutralization facilities

PRIMARY TREATMENT

Screening

One coarse manually cleaned bar screen

Grit Removal

Type: Grit channels, manually cleaned

Primary Sedimentation

Type: Link Belt
Size: Two 40' dia x 8' swd (125,000 gal)
Retention: 4.42 hours
Loading: Surface, 270 gal/ft^2/day
Weir, 2,700 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical aeration
Size: Four 30' x 30' x 14.2' (48,00 cu ft or 300,000 gal)
Retention: 10.6 hours

Aerators

Type: Four Ames-Crosta

Secondary Sedimentation

Type: Rex Chainbelt
Size: Two 45' dia x 7' swd (22,300 cu ft or 139,000 gal)
Retention: 4.9 hours
Loading: Surface, 214 gal/ft^2/day
Weir, 2,400 gal/ft/day

CHLORINATION

Type: F & P

Chlorine Contact Chamber

Size: Two 30' x 6' x 4.74' (1,700 cu ft or 10,600 gal)
Retention: 22.5 min

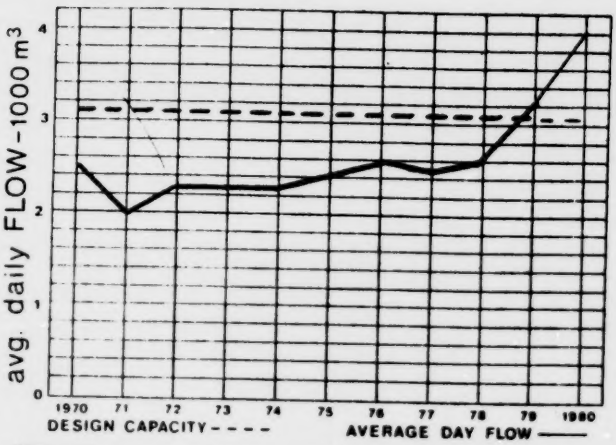
OUTFALL

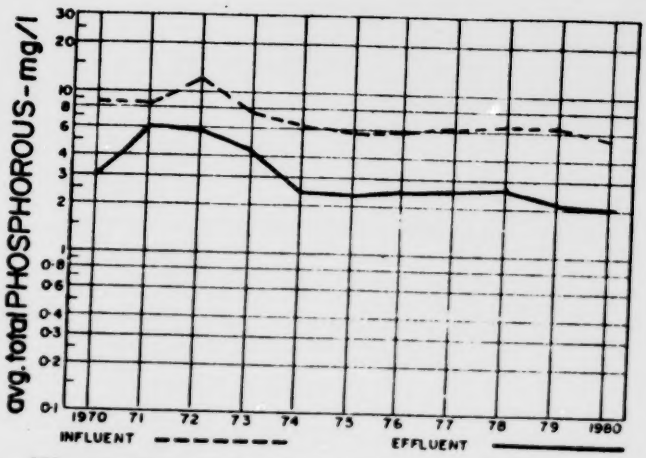
- to Canangagique Creek

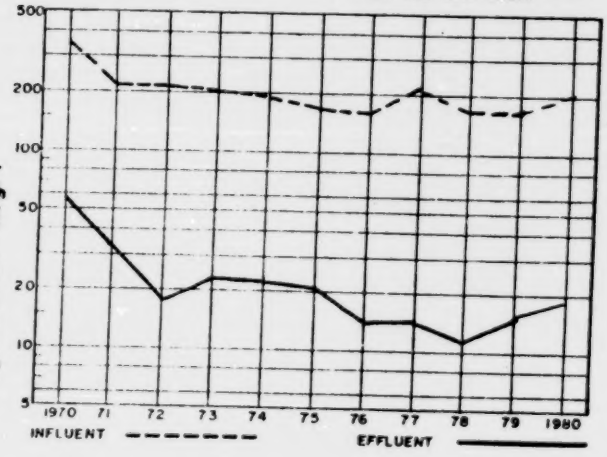
SLUDGE HANDLING

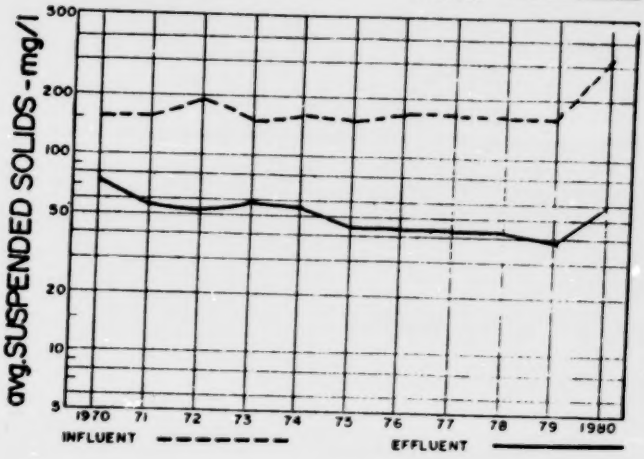
Digestion System

Type: Two-stage digestion
Primary - One 30' dia tank with two Dorr mixers (97,100 gal)
Secondary - One 30' dia tank (15,200 cu ft or 94,700 gal)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000150 ELMIRA MPCP

MUNICIPALITY : WOOLWICH (TOWN & IND)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION	: 16,392
POPULATION SERVED	: 6,795
PERCENT SERVED	: 41.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.091 1000 M3 DESIGN BOD5 : 400.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

DATE	<— FLOW DATA — TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	—><—BIOCHEMICAL OXYGEN DEMAND—>< INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	—><— SUSPENDED SOLIDS —>< INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	—><— TOTAL PHOSPHORUS —> INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	119.960	3.869	8.159		168.0	12.0	92	18.7	146.0	38.0	73	12.9	6.5	.9	84	.661
FEB	99.116	3.417	6.166		221.0	26.0	88	19.3	241.0	68.0	71	17.1	7.0	1.1	84	.585
MAR	146.248	4.717	10.975		226.0	60.0	73	24.2	241.0	90.0	62	22.0	7.5	1.6	78	.863
APR	181.963	6.065	11.093		175.0	8.6	95	30.2	177.0	59.0	66	21.4	5.5	1.1	80	.801
MAY	109.272	3.524	7.047		127.0	9.8	92	12.8	235.0	48.0	79	20.4	9.4	.8	90	.932
JUN	75.857	2.528	4.599		103.0	9.8	90	7.0	254.0	74.0	70	13.6	7.5	1.1	85	.485
JUL	100.238	3.233	5.448		219.0	10.0	95	20.9	700.0	114.0	83	58.7	6.7	2.4	64	.431
AUG	96.689	3.119	4.310		166.0	20.0	87	14.1	287.0	70.0	75	20.9	6.4	3.9	39	.242
SEP	113.573	3.785	5.760		188.0	18.0	90	19.3	354.0	81.0	77	31.0	8.8	2.7	69	.693
OCT	167.219	5.394	9.171		208.0	6.7	96	33.6	352.0	65.0	81	47.9	8.1	2.5	69	.936
NOV	134.138	4.471	6.748		312.0	31.0	90	37.6	492.0	81.0	83	55.1	8.7	4.0	54	.630
DEC	150.000	4.838			337.0	7.7	97	49.3	302.0	43.0	85	38.8	8.0	2.0	75	.900
TOTAL	1494.273							287.5				360.4				8.159
AVERAGE		4.080			204.1	18.3	91		315.0	69.2	78		7.5	2.0	73	
MAXIMUM			11.093													
NO. OF SAMPLES					49	49			240	242			49	48		

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110003923 WOOLWICH (ELMIRA IND.)

MUNICIPALITY : WOOLWICH (ELMIRA IND.)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 16,392
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.091 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	15.538	.501	.872		570.0				200.0				1.3			
FEB	12.639	.435	.769		640.0				246.0				1.5			
MAR	18.058	.583	1.417		617.0				196.0				1.2			
APR	18.978	.632	1.475		206.0				314.0				3.4			
MAY	14.190	.457	1.222		130.0				204.0				2.0			
JUN	11.199	.373	.765		105.0				289.0							
JUL	12.019	.387	.777		231.0				299.0							
AUG	4.322	.139	.552		246.0				220.0				2.9			
SEP	9.315	.310	.675		183.0				236.0				1.5			
OCT	31.731	1.023	.959		146.0				279.0				5.3			
NOV	14.041	.468	.552		373.0				317.0				1.7			
DEC	11.757	.379	.627		457.0				201.0				1.4			
TOTAL	173.787															
AVERAGE		.474			325.3				250.0				2.2			
MAXIMUM			1.475													
NO. OF SAMPLES					49				238				40			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110003932 WOOLWICH (ELMIRA TOWN)

MUNICIPALITY : WOOLWICH (ELMIRA TOWN)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 16,392
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.091 1000 M3 DESIGN BOD5 : 1100.0 MG/L DESIGN SUSP.SOLIDS : 320.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	104.422	3.368	7.840	10.091	121.0				105.0				7.6			
FEB	86.477	2.981	5.414	10.010	159.0				215.0				6.4			
MAR	128.190	4.135	9.558	10.010	152.0				223.0				6.7			
APR	162.985	5.432	9.618	10.010	124.0				120.0				5.0			
MAY	95.082	3.067	6.153	10.010	191.0				153.0				8.5			
JUN	64.658	2.155	3.834	10.010	123.0				201.0							
JUL	88.219	2.845	4.721	9.669	144.0				202.0							
AUG	92.367	2.979	3.787	9.555	146.0				243.0				7.7			
SEP	104.258	3.475	5.085	9.669	128.0				186.0				7.4			
OCT	135.488	4.370	8.212	10.010	144.0				178.0				8.5			
NOV	120.097	4.003	6.242	9.782	226.0				198.0				10.5			
DEC	138.243	4.459		9.737	146.0				158.0				7.0			
TOTAL	1320.486															
AVERAGE		3.606			150.3				181.8				7.5			
MAXIMUM			9.618	10.091												
NO. OF SAMPLES					49				239				40			

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386

Ministry of the Environment
Ontario

Central Region

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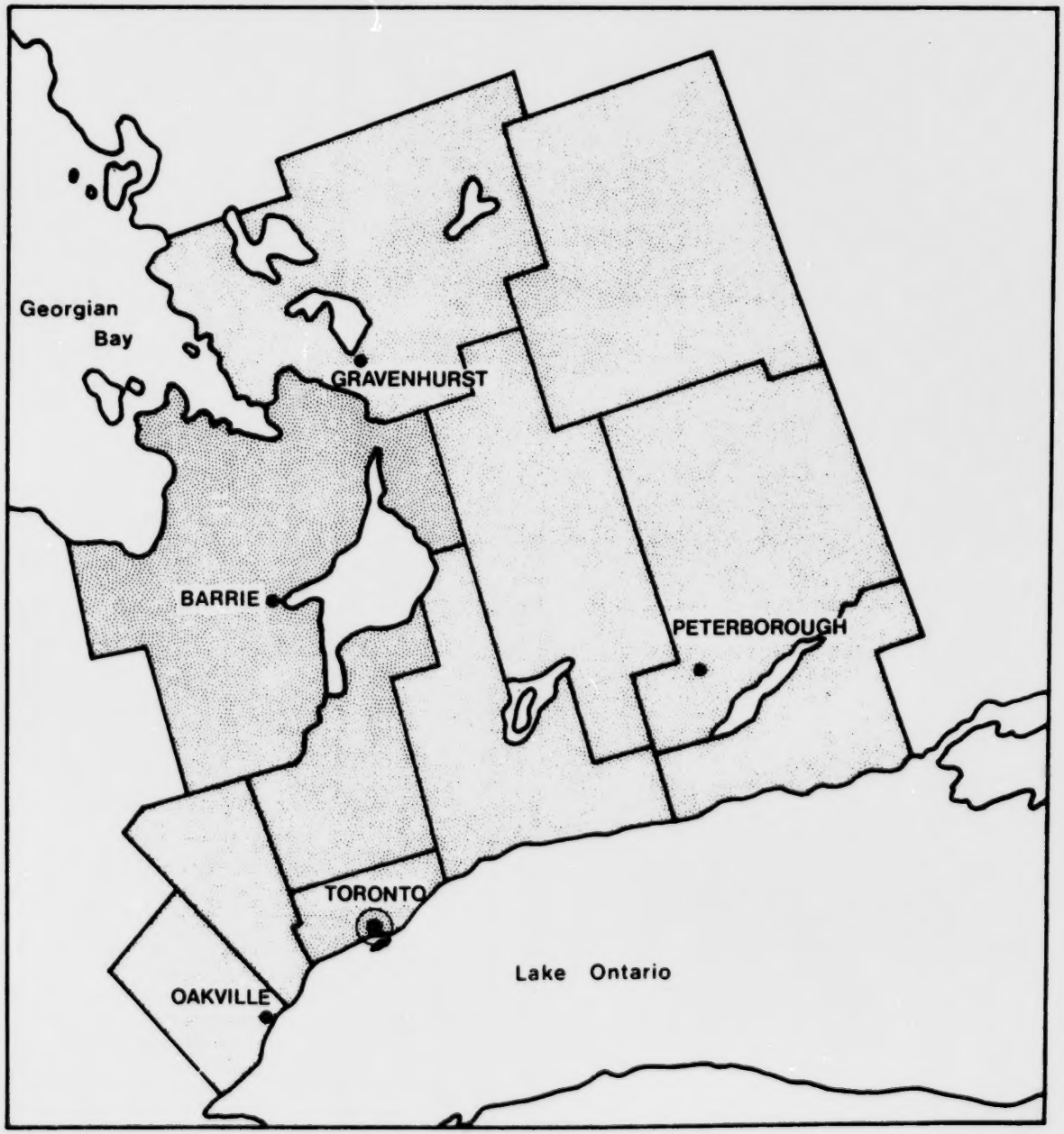


DESIGN DATA - METRIC

PROJECT: Town of Campbellford WPCP

PROJECT NO.: 1-0028-66

DESIGN FLOW: 5.91 m^3/d

BOD - Raw Sewage: 200 mg/l

SS - Raw Sewage: 200 mg/l

TREATMENT: Conventional Secondary

DESIGN POPULATION: 4200

PRIMARY TREATMENT

Grit Removal

Type: Channels, manually cleaned
Size: Two 11.13m x 0.81m x 1.14m
Flow Velocity: 13048 m/s

Screening

Type: Manually cleaned

Comminution

Type: Worthington model 15C-5

Primary Sedimentation

Type: Dorr-Oliver-Long S-7
Size: Two 12.19m dia. x 2.13m swd
Retention: 2.4 hours
Loading: Surface 19.55 $m^3/m^2 \cdot d$
Weir 59.60 $m^3/m \cdot d$

Outfall

- to the Trent River

CAMPBELLFORD

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical
Size: Three, each 250.03 m^3
Retention: 4 hours
Air Supply: Simon Carves, one aerator per tank

Secondary Sedimentation

Type: Dorr-Oliver-Long S-7
Size: Two 13.7 m dia. x 2.7 m swd
Retention: 4.8 hours
Loading: Surface 16.133 $m^3/m^2 \cdot d$
Weir 52.746 $m^3/m \cdot d$

CHLORINATION

Type: Wallace & Tiernan V800
Size: One 400

Chlorine Contact Chamber

Retention: 30 minutes

DIGESTION SYSTEM

Type: Single stage
Size: 9.14 m dia. x 7.62 m swd

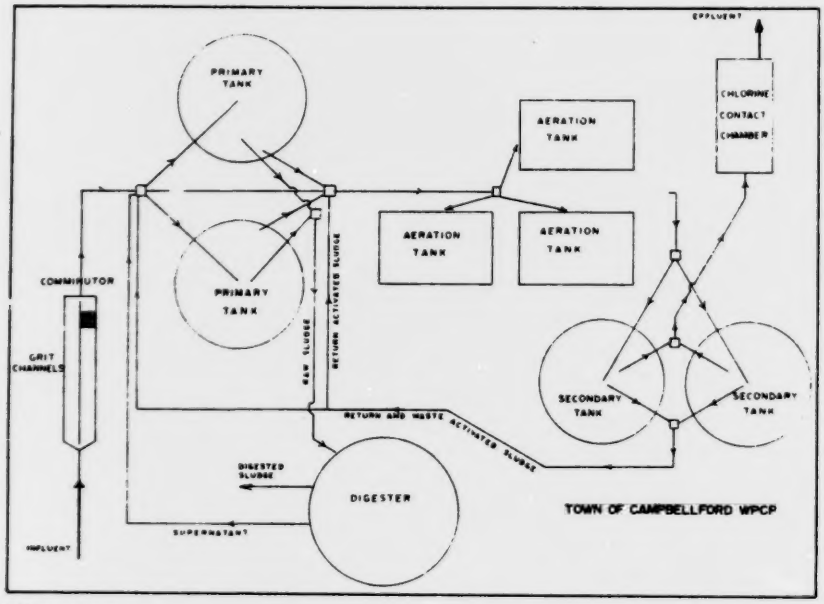
PUMPING STATION

P.S. #1

Three Crane Deming each 50.5 l/s @ 11.58m TDH

P.S. #2

Two Flygt CP3100 each 25.24 l/s @ 7.32m TDH



DESIGN DATA - IMPERIAL

PROJECT Town of Campbellford WPCP

PROJECT NO. 1-0028-66

TREATMENT Conventional Secondary

DESIGN FLOW 1.3 MIGD

BOD - Raw Sewage - 200 mg/l

SS - Raw Sewage - 200 mg/l

DESIGN POPULATION 4200

PRIMARY TREATMENT

Grit Removal

Type: Channels, manually cleaned
Size: Two 36'6"x2'8"x3'9"
Flow Velocity: 1 fps

Screening - Type: Manually cleaned

Comminution

Type: Worthington model 15C-5

Primary Sedimentation

Type: Dorr-Oliver-Long S-7
Size: Two 40'dia x 7' swd
Retention: 2.4 hours
Loading: Surface 400 gal/ft^2/day
Weir 4000 gal/ft/day

Outfall - to the Trent River

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical
Size: Three, each 55,000 gallons
Retention: 4 hours
Air Supply: Simon Carves, one aerator per tank

Secondary Sedimentation

Type: Dorr-Oliver-Long S-7
Size: Two 45' dia x 9' swd
Retention: 4.8 hours
Loading: Surface 330 gal/ft^2/day
Weir 3540 gal/ft/day

CHLORINATION

Type: Wallace & Tierman V800
Size: One 400

Chlorine Contact Chamber

Retention: 30 minutes

DIGESTION SYSTEM

Type: Single stage
Size: 30' dia x 25' swd

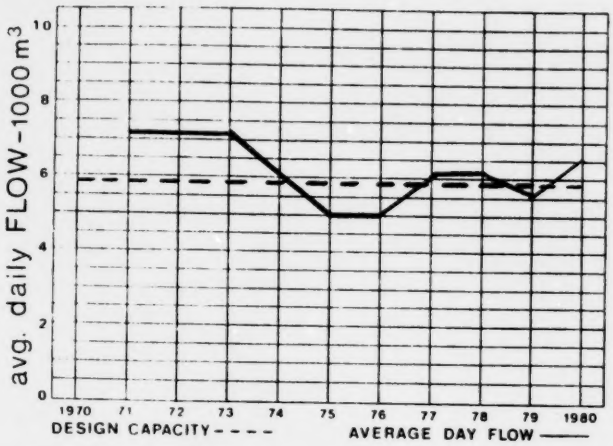
PUMPING STATION

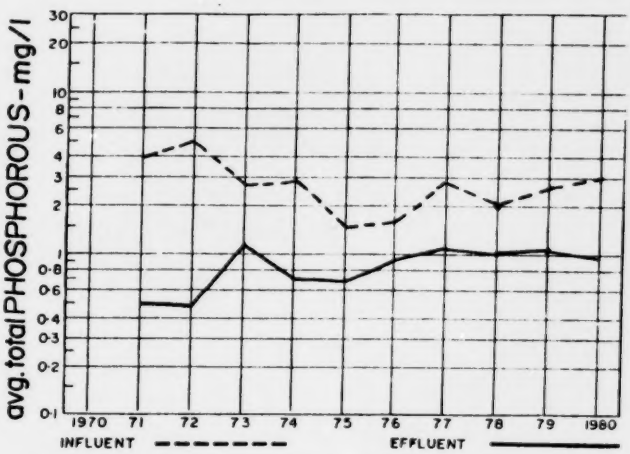
P.S. #1

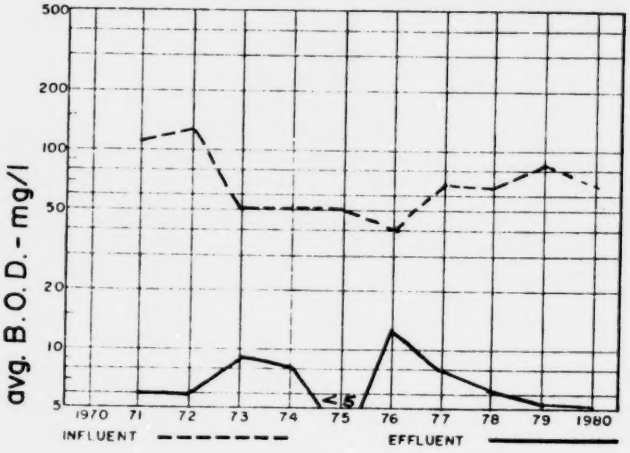
Three Crane Deming each 800 US gpm @ 38' tdh

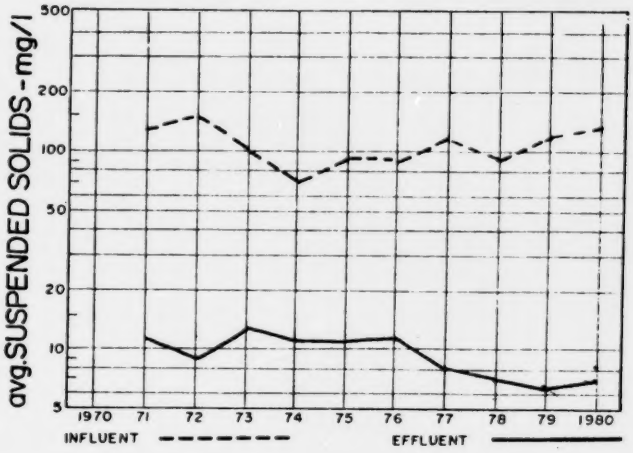
P.S. #2

Two Flygt CP3100 each 400 US gpm @ 24' tdh









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000962 CAMPBELLFORD WPCP

MUNICIPALITY : CAMPBELLFORD
REGION : 03 CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION	3,365
POPULATION SERVED	3,264
PERCENT SERVED	96.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.909 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	158.000	5.100	7.600	9.800	105.0	6.5	93	15.5	221.0	7.0	96	33.8	3.2	.9	70	.354
FEB	121.300	4.183	4.700	9.100	100.0	12.0	88	10.6	163.0	5.0	96	19.1	2.7	1.3	51	.170
MAR	206.500	6.661	11.100	13.100	115.0	13.0	88	21.0	255.0	10.0	96	50.5	4.1	1.5	63	.537
APR	253.900	8.463	10.000	11.800	70.0	5.0	92	16.5	61.0	7.0	88	13.7	1.5	.5	61	.234
MAY	198.400	6.400	7.900	8.500	18.0	3.0	83	2.9	95.0	7.0	92	17.4	1.0	.7	22	.044
JUN	204.400	6.813	7.400		42.0	6.8	83	7.1	71.0	5.0	92	13.4	1.6	.6	60	.196
JUL	219.800	7.090	7.500		50.0	1.2	97	10.7	53.0	5.0	90	10.5	2.1	1.2	42	.198
AUG	220.300	7.106	7.600	8.900	21.0	2.0	90	4.1	161.0	6.0	96	34.1	8.7	.7	91	1.762
SEP	207.700	6.923	7.600	8.600	92.0	2.0	97	18.6	110.0	6.0	94	21.6	2.6	.7	73	.395
OCT	224.100	7.229	8.700	9.600	46.0	3.0	93	9.6	41.0	5.0	87	8.0	1.7	.8	49	.188
NOV	202.900	6.763	8.600	10.100	62.0	2.0	96	12.1	154.0	13.0	91	28.6	2.3	.6	72	.337
DEC	186.100	6.003	8.700	11.200	60.0	5.5	90	10.1	93.0	10.0	89	15.4	4.5	1.0	77	.651
TOTAL	2403.400							139.5				266.6				5.066
AVERAGE		6.561			65.0	5.1	92		123.1	7.1	94		3.0	.9	69	
MAXIMUM			11.100	13.100												
NO. OF SAMPLES					12	12			47	45			12	12		

DESIGN DATA - METRIC

MISSISSAUGA (LAKEVIEW)

SOUTH PEEL - LAKEVIEW WPCP

TYPE: CONVENTIONAL SECONDARY

DESIGN FLOW 227.3 $10^3 m^3/d$
DESIGN BOD 300 mg/l
DESIGN S.S. 350 mg/l

PRETREATMENT
- Grit Removal
  Aerated tanks
  Two 32.3m x 6.4m x 4.1m
  Total vol. 1702.5m^3
  Air supply 1.8-2.5 l/s per 0.305m of tank
- Screening
  Mechanical front cleaned screens
  Two with 19.05mm openings in 2.13m Channels

PRIMARY SEDIMENTATION

Two 26.5m x 9.8m x 3.7m
Two 26.5m x 14.6 x 3.7m
Two 65.2m x 19.8m x 3.7m
Total vol: 14.18 $10^3 m^3$
Detention Time: 2 hr.
Overflow rate 44.0 $m^3/m^2 \cdot d$

SECONDARY TREATMENT
- Aeration Tanks
  Diffused air: SPARGERS
  Two 3-pass tanks, 43.8m x 19.2m x 4.4m
  Two 3-pass tanks, 43.8m x 18.3m x 4.6m
  Two 4-pass tanks, 65.8m x 24.4m x 4.3m
  Total volume: 42.19 $10^3 m^3$
  Detention time: 6.1 hr.
  Air supply: Three BROWN-BOVERI each 12,537 l/s
- Secondary Sedimentation
  Four 26.5m x 9.8m x 3.7m
  Two 31.7m x 14.6m x 3.7m
  Four 42.7m x 24.1m x 3.7m
  Total volume: 22.41 $10^3 m^3$
  Detention time: 30 hrs.
  Overflow rate: 28.1 $m^3/m^2 \cdot d$

CHLORINATION

One F & P 907.2 kg/d
Three W & T 907.2 kg/d
Supply: rail tank cars

SLUDGE HANDLING
- Primary Digesters
  Fixed roof, mixed by gas recirculation
  T 19.8m dia. x 8.5m swd
  Total volume 4.68 $10^3 m^3$
- Secondary Digesters
  Fixed concrete roof
  Four 30.5m dia. x 8.5 swd
  Volume: 42.78 $10^3 m^3$
- Holding Digesters
  Fixed concrete roof
  Two 24.4m dia. x 7.9m swd
  Total volume: 8.32 $10^3 m^3$

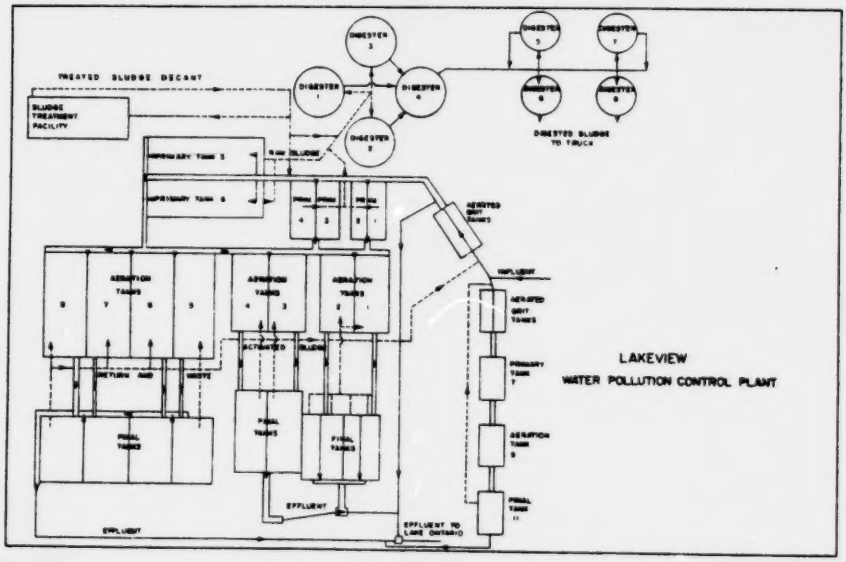
PLANT III
TYPE: CONVENTIONAL ACTIVATED SLUDGE

DESIGN FLOW 56.8 $10^3 m^3/d$
DESIGN BOD 300 mg/l
DESIGN S.S. 350 mg/l

PRETREATMENT
- Grit Removal
  Aerated Tanks
  Two 27.4m x 6.4m x 4.0m
  Detention: 8.68 min.
  Air Supply: 1.67 - 2.51 l/s
- Screening
  Mechanical front cleaned screens
  Two with 19.05mm openings in 2.13m channel.

PRIMARY SEDIMENTATION
One 65.2m x 19.8m x 3.7m
Total Volume: 4.73 l/s
Detention time: 2 hr.
Overflow rate: 44.0 $m^3/m^2 \cdot d$

SECONDARY TREATMENT
- Aeration Tanks
  Diffused air: SPARJERS
  One 4-pass tank, 131.7m x 6.1m x 4.6m
  Total Volume: 14.68 $10^3 m^3$
  Detention time: 7.67 hr.
  Air supply: Two Brown-Boveri each 14626.5 l/s
- Secondary Sedimentation
  One 3.7m x 24.0m x 79.2m
  Total volume: 7.09 $10^3 m^3$
  Detention time: 3 hr.
  Overflow rate: 28.8 $m^3/m^3 \cdot d$



DESIGN DATA - IMPERIAL

SOUTH PEEL - LAKEVIEW WPCP

TYPE: CONVENTIONAL SECONDARY

DESIGN FLOW 50.0 MIGD
DESIGN BOD 300 mg/l
DESIGN S.S. 350 mg/l

PRETREATMENT
- Grit Removal
  Aerated tanks
  Two 106' x 21' x 13.5'
  Total vol. 375,000 gal.
  Air supply 4.2 - 6 cfm
- Screening
  Mechanical front cleaned screens
  Two with 3/4" openings in 7' channels

PRIMARY SEDIMENTATION

Two 87' x 32' x 12'
Two 87' x 48' x 12'
Two 214' x 65' x 12'
Total vol: 3.12 MG
Detention Time: 2 hr.
Overflow rate 900 gpd/ft^2

SECONDARY TREATMENT
- Aeration Tanks
  Diffused air: SPARGERS
  Two 3-pass tanks, 144' x 63' x 14.3'
  Two 3-pass tanks, 144' x 60' x 15'
  Two 4-pass tanks, 216' x 80' x 14'
  Total volume: 9.24 MG
  Detention time: 5.9 hr.
  Air supply: Three BROWN-BOVERI each 30,000 cfm
- Secondary Sedimentation
  Four 87' x 32' x 12'
  Two 104' x 48' x 12'
  Four 140' x 79' x 12'
  Total volume: 4.93 MG
  Detention time: 3.2 hr.
  Overflow rate: 575 gpd/ft^2

CHLORINATION

One F & P 2000 lb/day cap.
Three W & T 2000 lb/day cap.
Supply: rail tank cars.

SLUDGE HANDLING
- Primary Digesters
  Fixed roof, mixed by gas recirculation
  Three 100' dia. x 30.5' swd
  Total volume 7.88000 ft^3 or 4.9 MG
- Secondary Digesters
  Fixed concrete roof
  One 100' dia x 30.5 swd
  Volume: 262,000 ft^3 or 1.64 MG
- Holding Digesters
  Fixed concrete roof
  Two 80' dia x 25.5' swd
  Total volume: 256,000 ft^3 or 1.60 MG

(NOTE: Two tanks 65' dia x 25' swd not in use)

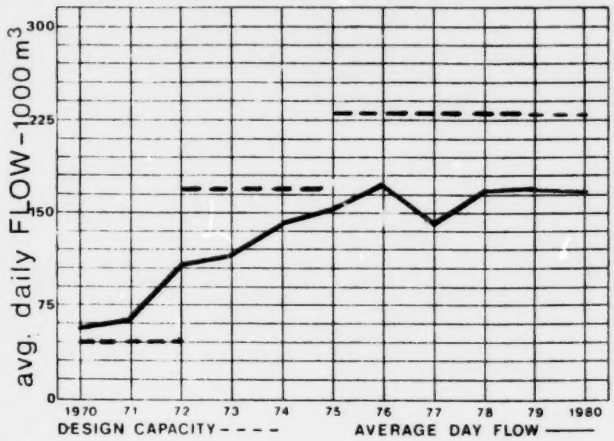
PLANT III
TYPE: CONVENTIONAL ACTIVATED SLUDGE

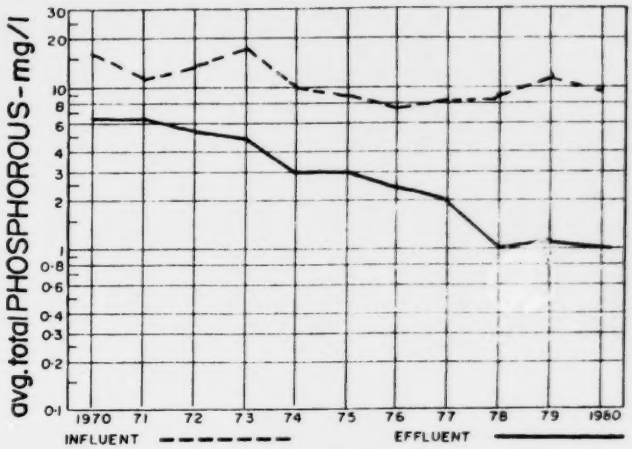
DESIGN FLOW 12.5 MIGD
DESIGN BOD 300 mg/l
DESIGN S.S 350 mg/l

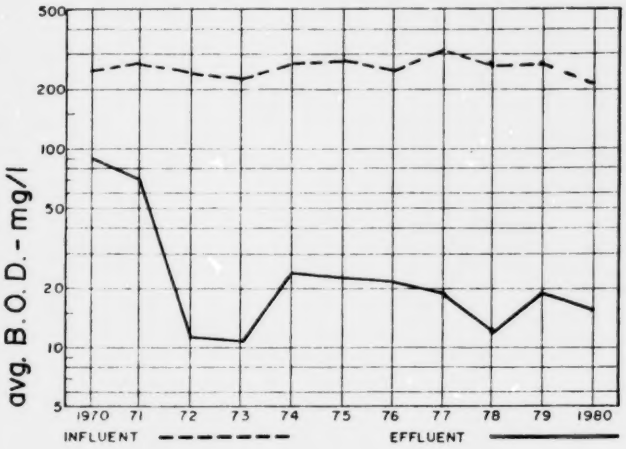
PRETREATMENT
- Grit Removal
  Aerated Tanks
  Two 90' x 21' x 13.0'
  Detention 8.68 min.
  Air Supply 4 - 6 cfm.
- Screening
  Mechanical front cleaned screens
  Two with 3/4" openings in 7' channels.

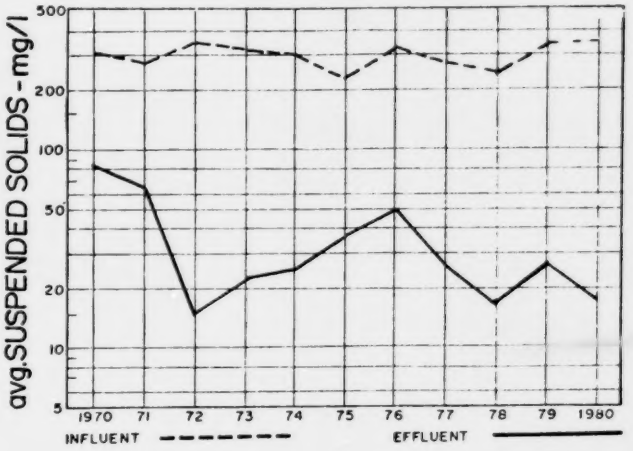
PRIMARY SEDIMENTATION
One 214' x 65' x 12'
Total Volume: 1.04 MG
Detention time: 2 hr.
Overflow rate: 900 gpd/ft^2

SECONDARY TREATMENT
- Aeration Tanks
  Diffused air: SPARJERS
  One 4-pass tank, 432' x 20' x 15'
  Total Volume: 3.23 MG
  Detention time: 4.67 hr.
  Air supply: Two Brown-Boveri each 33,000 cfm.
- Secondary Sedimentation
  One 12.16' x 78.75' x 260'
  Total volume: 1.56 MG
  Detention time: 3 hr.
  Overflow rate: 610 gpd/ft^2









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001284 LAKEVIEW WPCP SOUTH-PEEL SYSTEM

MUNICIPALITY : MISSISSAUGA SOUTH-PEEL
REGION : 03 CENTRAL

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 440,000
POPULATION SERVED : 40,000
PERCENT SERVED : 9.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 227.300 1000 M3 DESIGN BOD5 : 300.0 MG/L DESIGN SUSP.SOLIDS : 350.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	5076.182	163.656	220.936	267.759	298.0	20.0	93	1411.1	346.0	17.0	95	1670.0	10.7	1.0	90	48.884
FEB	4270.967	147.290	155.473	221.845	295.0	24.0	91	1157.4	101.0	18.0	82	354.4	10.2	1.5	85	37.456
MAR	5225.627	168.657	312.310	409.140	165.0	17.0	89	773.3	295.0	16.0	94	1457.9	9.7	.8	90	46.299
APR	6240.294	208.206	315.038	454.600	68.0	7.5	88	377.5	95.0	14.0	85	505.4	5.7	.3	93	33.386
MAY	5635.222	181.840	215.026	280.034	215.0	14.0	93	1132.6	278.0	12.0	95	1498.9	9.0	2.1	76	38.883
JUN	5236.083	174.566	209.571	277.306	224.0	12.0	94	1110.0	270.0	12.0	95	1350.9	14.0	.5	95	70.268
JUL	5237.447	168.657	210.480	346.405	270.0	7.5	97	1374.8	245.0	6.0	97	1251.7	7.9	.6	92	38.233
AUG	5094.702	164.565	192.750	256.394	158.0	10.0	93	754.0	389.0	12.0	96	1920.7	7.7	.8	88	34.899
SEP	5002.873	166.838	193.660	277.306	169.0	14.0	91	775.4	373.0	10.0	97	1816.0	9.0	.6	93	42.024
OCT	5227.900	168.657	206.843	301.854	382.0	26.0	93	1861.1	668.0	36.0	94	3304.0	16.2	1.3	91	77.896
NOV	4735.568	157.746	173.657	294.581	276.0	37.0	86	1131.8	473.0	52.0	89	1993.6	9.2	2.2	76	33.149
DEC	5160.619	166.384	224.118	295.945	215.0	20.0	90	1006.3	363.0	19.0	94	1775.2	9.6	.8	91	45.310
TOTAL	62143.484							12865.8				18899.3				546.687
AVERAGE		169.755			227.9	17.4	92		324.6	18.6	94		9.9	1.0	89	
MAXIMUM			315.038	454.600												
NO. OF SAMPLES					79	201			80	211			55	145		

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

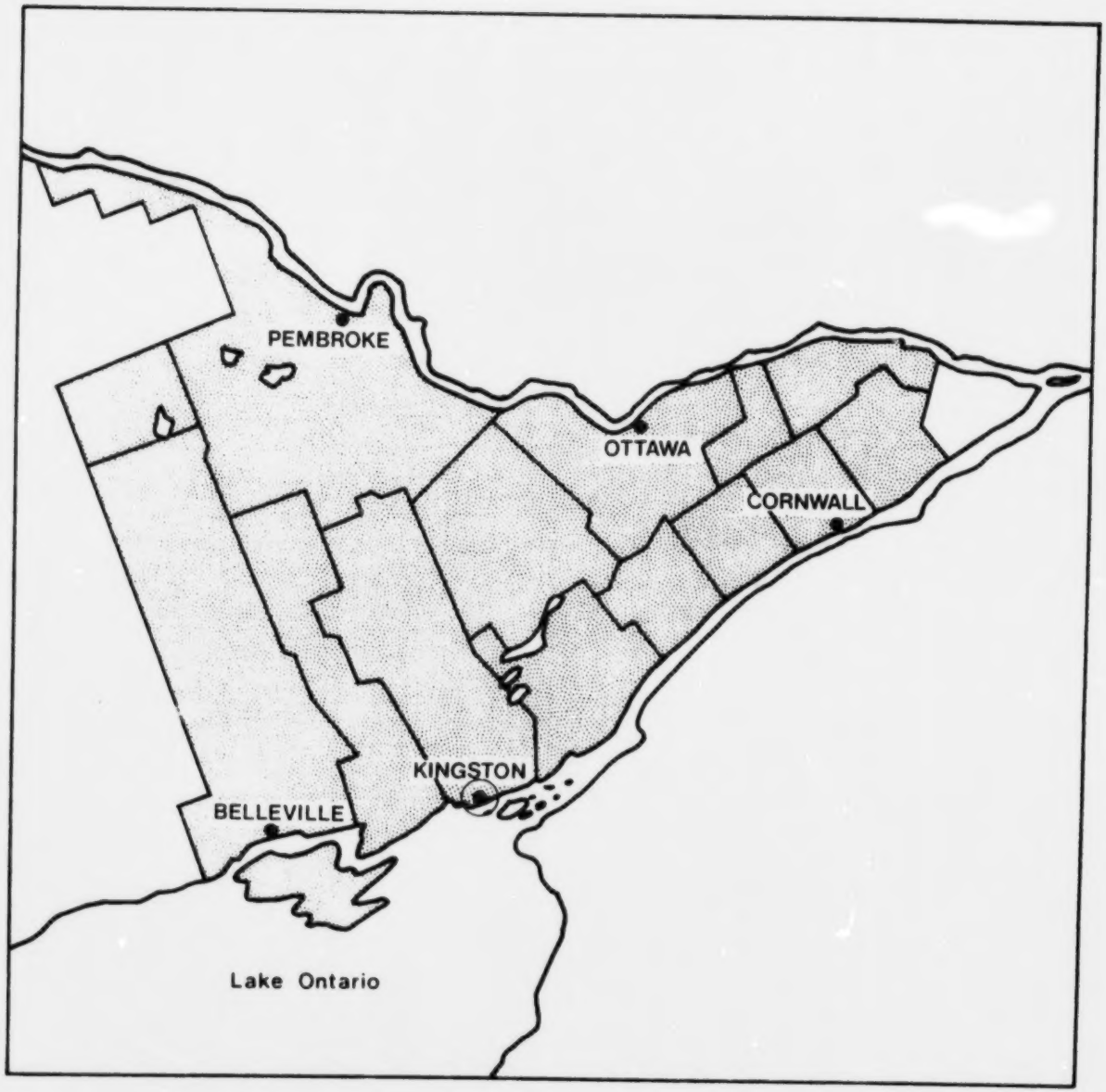
Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Ministry of the Environment
Ontario

Southeastern Region

④



DESIGN DATA - METRIC

BELLEVILLE

PROJECT NO. 1-0004-66
PROJECT City of Belleville WPCP
TREATMENT Conventional Secondary

DESIGN FLOW 36.4 $10^3 m^3/d$
DESIGN POPULATION 52,000

BOD - Raw Sewage 130 mg/l
- Removal 88%

SS - Raw Sewage 175 mg/l
- Removal 91%

PUMPING STATIONS

a) Plant site @ 10.7m TDH

One Worthington 189.3 l/s (electric)
One Worthington 126.1 l/s (electric)
One Worthington 189.3 l/s (electric and diesel)

b) Front Street

One Worthington 189.3 l/s (electric @16.8m TDH)
One Worthington 126.1 l/s (electric @16.8m TDH)
One Worthington 252.2 l/s (diesel & electric @ 16.8m TDH)
One Fairbanks Morse 333.0 l/s (diesel @12.8m TDH)

c) Dundas Street West

One Worthington 31.5 l/s (electric @6.8m TDH)
One Worthington 98.4 l/s (diesel @ 12.2m TDH)

PRIMARY TREATMENT

Grit Removal

Type: Aerated grit tank with grab bucket
Size: Two 7.3m x 7.3m x 3.8m
Volume: 238.2m^3
Retention: 9.4 minutes
Air Supply: Two Roots blowers 255 l/s each
Two Aerzener Rotary 254.9 l/s each

Screening

Type: Mechanically cleaned
Size: .05m opening

Comminution

Type: Two Chicago Pump barminutor Model C-36

Primary Sedimentation

Type: Falk
Size: Four 21.3m x 11.0m x 3.7m (3418.6m^3)
Retention: 2.3 hours
Loading Surface: 39.9m^3/m^2 d
Weir: 219.0m^3/m-d

SLUDGE HANDLING

Digestion System

Type: Two stage

SECONDARY TREATMENT

Aeration Tanks

Type: Three, 3-pass
Size: each pass 18.3m x 6.1m x 3.7m swd
Volume: 3677.7m^3

Retention: 2.4 hours

Air Supply

Type: Aerzen Maschinen fabric
Size: Three 952.8 l/s @ 48.3 kPa

Diffusers

Type: Sparjers - 8 mm
Spacing: 10 cm centers

Secondary Sedimentation

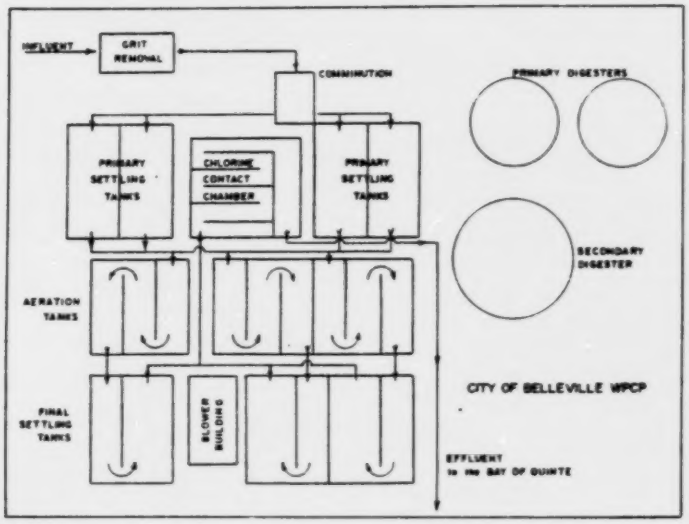
Type: Falk
Size: Three 25.3m x 17.2m x 3.7m (2 pass)
Volume: 4864.2m^3
Retention: 3 hours
Loading: Surface 39.1m^3/m^2-d
Weir: 193.7m^3/m-d

CHLORINATION

Type: Fischer & Porter
Size: One 453.6 kg/d
One: 680.4 kg/d

Chlorine Contact Chamber

Size: 16.7m x 18.3m x 3.4m
Volume: 759.2m^3



DESIGN DATA - IMPERIAL

PROJECT NO. 1-0004-66
PROJECT City of Belleville WPCP
TREATMENT Conventional Secondary

DESIGN FLOW 8.0 mgd

DESIGN POPULATION 52,000

BOD - Raw Sewage 130 mg/l
- Removal 88%

SS - Raw Sewage 175 mg/l
- Removal 91%

PUMPING STATIONS

a) Plant site @ 35' tdh

One Worthington 2500 gpm (electric)
One Worthington 1666 gpm (electric)
One Worthington 2500 gpm (electric and diesel)

b) Front Street

One Worthington 2500 gpm (electric @ 55' tdh)
One Worthington 1666 gpm (electric @ 55' tdh)
One Worthington 3332 gpm (diesel and electric @ 55' tdh)
One Fairbanks Morse 4400 gpm (diesel @ 42' tdh)

c) Dundas Street West

One Worthington 416 gpm (electric @ 29' tdh)
One Worthington 1300 gpm (diesel @ 40' tdh)

PRIMARY TREATMENT

Grit Removal

Type: Aerated grit tank with grab bucket
Size: Two 24' x 24' x 12½' (52,400 gal)
Retention: 9.4 minutes
Air Supply: Two Roots blowers 610 scfm each
Two Aerzener Rotary 350 scfm each

Screening

Type: Mechanically cleaned
Size: 2" opening

Comminution

Type: Two Chicago Pump barminutor Model C-36

Primary Sedimentation

Type: Falk
Size: Four 70' x 36' x 12' (752,000 gal total)
Retention: 2.3 hours
Loading: Surface: 795 gal/ft^2/day
Weir: 14,700 gal/ft/day

SLUDGE HANDLING

Digestion System

Type: Two stage

Primary:
Type: Gas mixed
Size: Two 45' dia. x 27' swd (75,400 ft^3 total)

Secondary:
Type: Non mixed
Size: One 55' dia. x 27' swd (59,400 ft^3 total)

SECONDARY TREATMENT

Aeration Tanks

Type: Three, 3-pass each pass 60' x 20' x 12' swd (Volume 603,000 gal total)

Retention: 2.4 hours

Air Supply

Type: Aerzen Maschinen fabric
Size: Three 2280 scfm @ 7 psi

Diffusers

Type: Sparjers - 5/16" Spacing: 4 inch centers

Secondary Sedimentation

Type: Falk
Size: Three 83' x 56.5' x 12' (2 pass) (1,070,000 gal total)
Retention: 3 hours
Loading: Surface 800 gal/ft^2/day
Weir 13,000 gal/ft/day

CHLORINATION

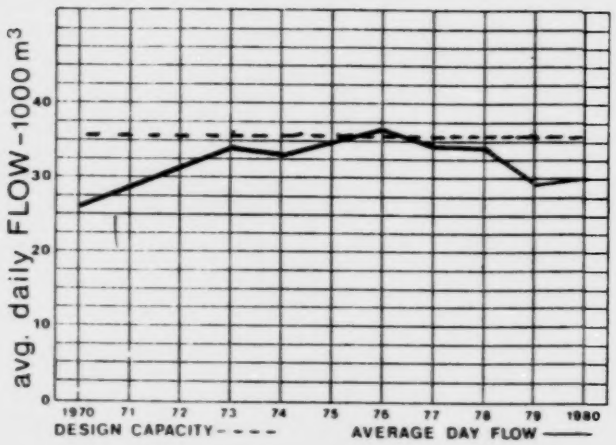
Type: Fischer & Porter
Size: One 1,000 lb/day
One 1,500 lb/day

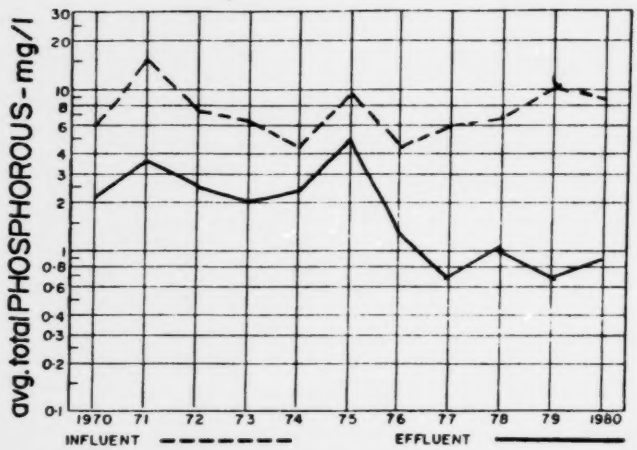
Chlorine Contact Chamber

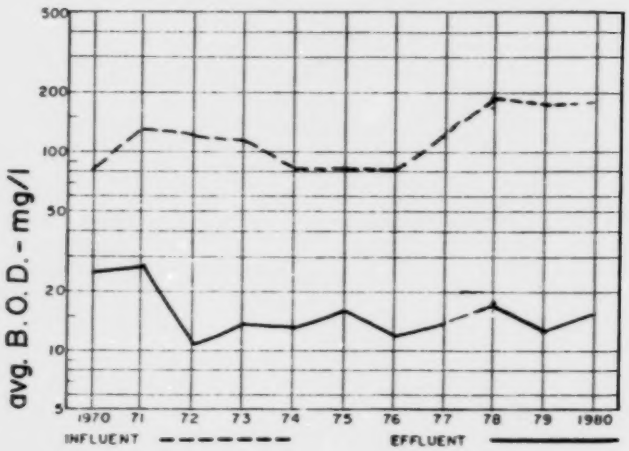
Size: 54.7' x 60' x 11' (167,000 gal)
Retention: 30 minutes

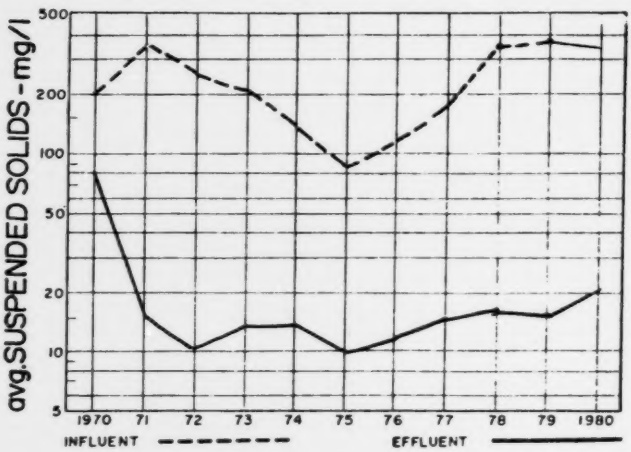
Outfall

Approx. 280' of 48" dia. concrete pipe and 1179' of 36" dia. concrete pipe to Bay of Quinte









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000016 BELLEVILLE WPCP

MUNICIPALITY : BELLEVILLE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION	34,822
POPULATION SERVED	35,550
PERCENT SERVED	102.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 36.368 1000 M3 DESIGN BOD5 : 130.0 MG/L DESIGN SUSP.SOLIDS : 175.0 MG/L

	<--- FLOW DATA --->				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	1015.000	32.800			150.0	12.0	92	140.0	338.0	12.0	96	330.8	8.7	.6	93	8.222
FEB	844.820	29.770			248.0	20.0	91	192.6	349.0	16.0	95	281.3	9.0	1.0	88	6.759
MAR	1253.200	40.400			200.0	14.0	93	233.0	472.0	18.0	96	568.9	13.4	1.2	91	15.289
APR	1210.200	40.300			147.0	15.0	89	159.7	324.0	28.0	91	358.2	7.9	1.4	82	7.866
MAY	941.100	30.400	41.400	41.600	186.0	8.0	95	167.5	370.0	12.0	96	336.9	8.2	.7	91	7.058
JUN	786.500	26.200	39.100	39.100	199.0	10.0	94	148.6	408.0	12.0	97	311.4	10.5	.8	92	7.629
JUL	762.040	24.580	54.550	72.740	141.0	10.0	92	99.8	353.0	16.0	95	256.8	10.9	.6	94	7.849
AUG	794.870	25.640	54.600	72.740	200.0	13.0	93	148.6	417.0	17.0	95	317.9	9.2	.5	94	6.915
SEP	787.820	26.260	68.190	81.830	195.0	18.0	90	139.4	252.0	22.0	91	181.1	8.8	.8	90	6.303
OCT	810.390	26.140	65.920	86.370	210.0	24.0	88	150.7	342.0	33.0	90	250.4	9.3	1.6	82	6.240
NOV	868.960	28.960	36.370	50.010	160.0	23.0	85	119.0	305.0	35.0	88	234.6	5.3	1.0	81	3.737
DEC	1089.730	35.150	60.140	90.920	214.0	24.0	88	207.0	254.0	25.0	90	249.5	8.1	1.5	81	7.192
TOTAL	11164.630							1906.4				3678.2				91.059
AVERAGE		30.550			187.5	15.9	91		348.6	20.5	94		9.1	.9	89	
MAXIMUM			68.190	90.920												
NO. OF SAMPLES					180	182			180	178			169	184		

KINGSTON

DESIGN DATA - METRIC

PROJECT: Kingston Twp WPCP

PROJECT NO 200284-70

TREATMENT: Conventional Secondary

DESIGN FLOW: 11.138 $10^3 m^3/d$

BOD - Raw Sewage - 238 mg/l
- Removal - 92.

PRIMARY TREATMENT

COMMINUTOR
Type: Two, C-18 barmiquors
Capacity: (each) 15 $10^3 m^3/d$

SEWAGE LIFT PUMPING
Type: Two, Weinman 6-UH
Size: (each) 75.7 l/s @ 10.7m TDH

Type: One, Arthur-Leitch 8 SEA
Size: 73.4 l/s @ 9.8m TDH

AERATED GRIT TANK
Type; rectangular
Size: 4.6m x 4.3m x 3.0m swd
Volume: 59.5 m^3
Retention: 7.8 min

PRIMARY TANKS
Type: Two, rectangular
Size: 3.7m x 14m x 2.3m swd
Volume: (total) 236.5 m^3
Surface Settling Rate: 10.9 m^3/m^2-d @ 3.7 $10^3 m^3/d$
Retention: 1.55 hr at 3.7 $10^3 m^3/d$
Type: Two, rectangular
Size: 6.1m x 18.3m x 3.4m swd
Volume: (total) 762.7m^3
Retention: 2.5 hr @ 7.36 $10^3 m^3/d$
Surface Setting Rate 10.06m^3/m^2-d @ 7.36 $10^3 m^3/d$

RAW SLUDGE PUMPS
Type: Two, plunger type
Size: (each) 15.4 l/s

Type: One, Chicago Pumps SF-44
Size: 6.3 m^3 @ 30.5m TDH

SECONDARY TREATMENT

AERATION TANKS
Type: Two, rectangular
Size: (each) 6.9m x 18.8m x 4.6m swd
Volume: (total) 118.2m^3
Retention: 7.7 hr @ 0.368 $10^3 m^3/d$
Aerators: Chicago Pump discfusers

Type: Two square
Size: (each) 12.5m x 12.5m x 4.6m
Volume: (total) 1416.5 m^3
Retention: 4.6 hr @ 7.4 $10^3 m^3/d$
Aerators: 1 mechanical 29.8 kW per tank

RETURN SLUDGE PUMPS
Type: Two, Crane 1.8m x 1.8m SPL horizontal
Size: each 42.8 l/s @ 9.1m TDH

Type: Two, Weinman UH-B horizontal
Size: (each) 22.1 l/s @ 7.6m TDH

FINAL SETTLING TANKS
Type: Two, rectangular
Size: (each) 3.7m x 17.1m x 3.0m swd
Volume: (total) 371.4 m^3
Retention: 2.4 hr @ 3.7 $10^3 m^3/d$
Surface Settling Rate:
- 29.3 m^3/m^2-d @ 3.7 $10^3 m^3/d$

Type: Two, rectangular
Size: (each) 6.1m x 20.6m x 3.7m swd
Volume: (total) 918.3 m^3
Retention: 3.0 hr at 7.36 $10^3 m^3/d$
Surface Settling Rate:
29.3 m^3/m^2-d @ 7.36 $10^3 m^3/d$

SLUDGE DIGESTION

Type: Two-stage anaerobic

PRIMARY DIGESTER
Type: One, circular
Size: 16.8m x 6.1m swd
Volume: 1543.4 m^3

SECONDARY DIGESTER
Type: One, circular
Size: 16.8m x 6.1m swd
Volume: 1543.4 m^3

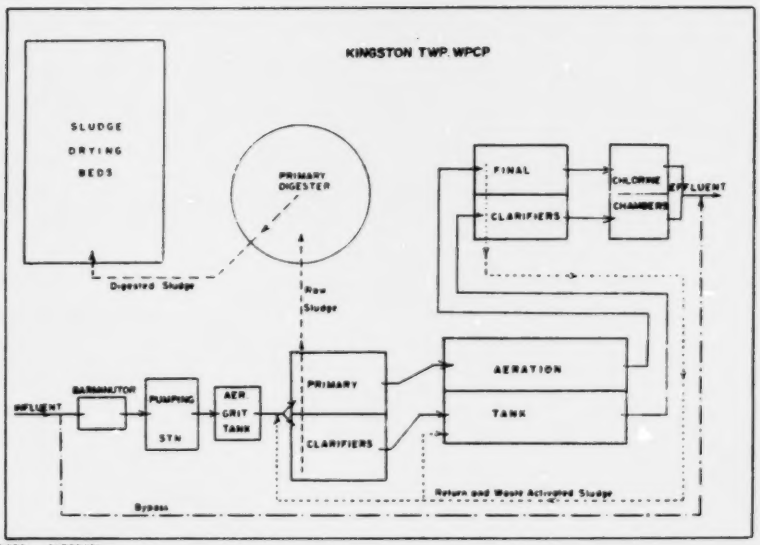
SLUDGE DRYING BEDS rectangular
Type: four, concrete-walled
Size: (each) 6.1m x 24.4m
Area: (total) 181.2m^3

CHLORINATION

CHLORINE CONTACT TANKS
Type: One, rectangular
Size: 2.7m x 8.4m x 2m swd
Volume: 308.7 m^3
Retention: 20 min @ 3.7 $10^3 m^3/d$

Type: One, rectangular
Size: 4.1m x 12.5m x 3.0m swd
Volume: 1572.9 m^3
Retention: 31 min @ 7.36 $10^3 m^3/d$

CHLORINATOR
Type: Wallace and Tiernan A-731
Capacity: (max) 181.5 kg/d



DESIGN DATA - IMPERIAL

PROJECT: Kingston Twp WPCP

PROJECT NO: 2-0284-70

TREATMENT: Conventional Secondary

DESIGN FLOW: 2.45 MIGD

BOD Raw Sewage - 238 mg/l
- Removal - 92%

PRIMARY TREATMENT

COMMINUTOR
Type: Two, C-18 barminutors
Capacity: (each) 3.3 MIGD

SEWAGE LIFT PUMPING
Type: Two, Weinman 6-UH
Size: (each) 1000 IGPM @ 35' TDH

Type: One, Arthur-Leitch 8 SEA
Size: 970 IGPM @ 32' TDH

AERATED GRIT TANK
Type: rectangular
Size: 15' x 14' x 10' swd
Volume: 13,100 I.G.
Retention: 7.8 min

PRIMARY TANKS
Type: Two, rectangular
Size: 12' x 46' x 7.6' swd
Volume: (total) 52100 I.G.
Surface Settling Rate: 730 GPD/ft (@ 0.41 MIGD
Retention: 1.55 hr at 0.41 MIGD
Type: Two, rectangular
Size: 20' x 60' x 11.2½' swd
Volume: (total) 168,000 I.G.
Retention: 2.5 hr @ 1.62 MIGD
Surface Setting Rate: 475 IGPD/ft
1.6 MIGD

RAW SLUDGE PUMPS
Type: Two, plunger type
Size: (each) 200 IGPM

Type: One, Chicago Pumps SF-44
Size: 100 usgpm @ 100' TDH

SECONDARY TREATMENT

AERATION TANKS
Type: Two, rectangular
Size: (each) 22.5' x 61.6' x 15' swd
Volume: (total) 26,000 I.G.
Retention: 7.7 hr @ 0.81 MIGD
Aerators: Chicago Pump discfusers

Type: Two, square
Size: (each) 41' x 41' x 15'
Volume: (total) 312,000 I.G.
Retention: 4.6 hr @ 1.62 MIGD
Aerators: 1 mechanical 40 HP per tank

RETURN SLUDGE PUMPS
Type: Two, Crane 6 x 6 SPL horizontal
Size: each 565 igpm @ 30' TDH

Type: Two, Weinman UH-B horizontal
Size: (each) 350 usgpm @ 25' TDH

FINAL SETTLING TANKS
Type: Two, rectangular
Size: (each) 12' x 56' x 9.75' swd
Volume: (total) 81,700 I.G.
Retention: 2.4 hr @ 0.81 MIGD
Surface Settling Rate:
- 600 IGPD/ft² @ 0.81 MIGD

Type: Two, rectangular
Size: (each) 20' x 67.5' x 12' swd
Volume: (total) 702,000 I.G.
Retention: 3.0 hr at 1.62 MIGD
Surface Settling Rate:
- 600 IGPD/ft² @ 1.62 MIGD

SLUDGE DIGESTION

Type: Two-stage anaerobic

PRIMARY DIGESTER
Type: One, circular
Size: 55' dia x 20' swd
Volume: 54,500 ft³

SECONDARY DIGESTER
Type: One, circular
Size: 55' dia x 20' swd
Volume: 54,500 ft³

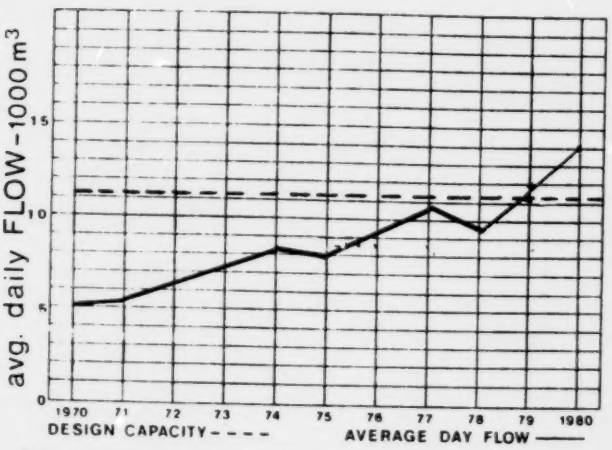
SLUDGE DRYING BEDS rectangular
Type: four, concrete-walled
Size: (each) 20' x 80'
Area: (total) 6400 ft²

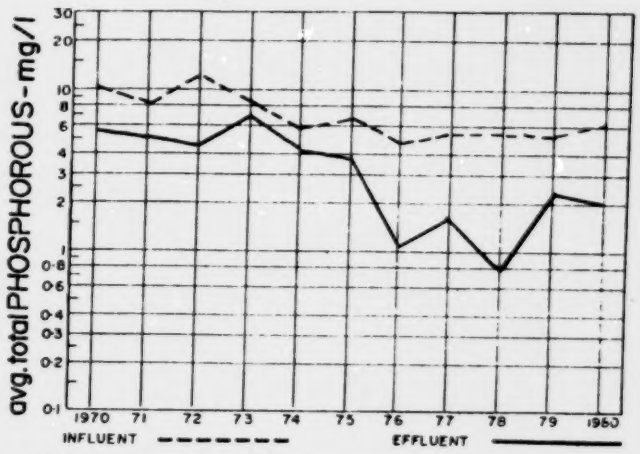
CHLORINATION

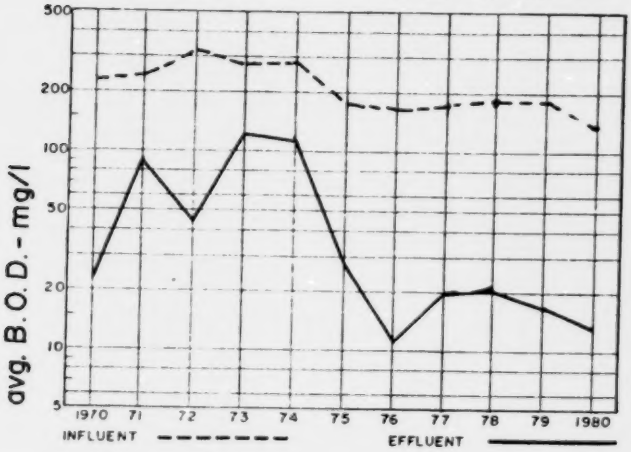
CHLORINE CONTACT TANKS
Type: One, rectangular
Size: 9' x 27.7' x 7' swd
Volume: 10,900 I.G.
Retention: 20 min @ 0.81 MIGD

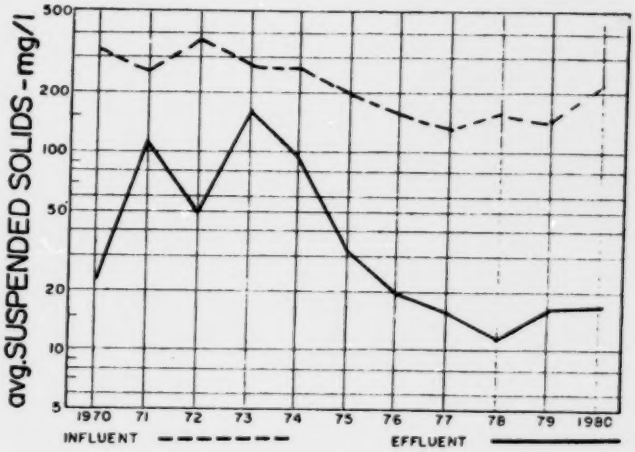
Type: One, rectangular
Size: 13.5' x 41' x 10' swd
Volume: 34,600 I.G.
Retention: 31 min @ 1.62 MIGD

CHLORINATOR
Type: Wallace and Tiernan A-731
Capacity: (max) 400 lb/day









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000365 KINGSTON TWP WPCP

MUNICIPALITY : KINGSTON TWP
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION	: 25,820
POPULATION SERVED	: 5,000
PERCENT SERVED	: 19.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 11.137 1000 M3 DESIGN BOD5 : 238.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	393.940	12.700	24.100		192.0	27.5	85	64.8	186.0	12.7	93	68.2	5.2	3.9	25	.512
FEB	272.420	9.390	14.520		246.0	23.0	90	60.7	98.4	10.8	89	23.8	5.3	5.8	-	-
MAR	435.320	14.040	20.240	22.930	140.0	23.3	83	50.8	101.0	28.8	71	31.4	3.5	5.7	-	-
APR	564.280	18.810	34.690	34.100	128.0	24.7	80	58.2	58.0	23.9	58	19.2	3.3	.9	71	1.326
MAY	400.950	12.930	20.000	22.500	130.0	23.6	81	42.6	118.0	18.7	84	39.8	4.6	.7	83	1.532
JUN	348.590	11.620	13.540	20.600	134.0	4.9	96	45.0	142.0	11.0	92	45.6	9.0	1.1	87	2.754
JUL	353.180	13.530		17.280	127.0	11.7	90	40.7	529.0	20.4	96	179.6	17.0	1.8	89	5.368
AUG	404.580	13.051	90.000		48.0	5.8	87	17.0	192.2	11.4	94	73.1	5.6	.8	85	1.942
SEP	413.540	13.790	18.900		227.0	11.4	94	89.1	248.0	23.9	90	92.6	6.1	1.1	82	2.076
OCT	486.080	15.680	25.390		184.0	4.6	97	87.2	165.0	8.0	95	76.3	5.6	1.0	81	2.212
NOV	459.490	15.320	17.330		56.0	9.0	83	21.5	102.0	14.5	85	40.2	4.2	1.0	76	1.470
DEC	498.630	16.080	28.600		70.0	5.0	92	32.4	643.0	14.0	97	313.6	5.4	1.0	81	2.194
TOTAL	5031.000							610.4				1003.8				21.386
AVERAGE		13.912			140.1	14.5	89		215.2	16.5	92		6.2	2.0	66	
MAXIMUM			90.000	34.100												
NO. OF SAMPLES					42	67			50	74			58	63		

DESIGN DATA - METRIC

SIDNEY (BATAWA)

PROJECT Sidney Twp. WPCP

PROJECT NO. 2-0121-82

TREATMENT Conventional Secondary

DESIGN FLOW 0.56 $10^3 m^3/d$

DESIGN POPULATION 1,500

BOD - Raw Sewage 220 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 90%

PRIMARY TREATMENT

Grit Removal

Type: Channels, manually cleaned
Size: Two 2.8m x 2.7m x 1.8m
Flow Velocity: 0.18 m/s
Retention: 16.6 sec

Comminution

- One Chicago Pump, Model 10A

Screening

One 3.8 cm c-c on comminutor bypass
One 3.8 cm c-c on plant bypass

Primary Sedimentation

Size: One 4.9m x 4.9m x 3.4m swd
(41.5 m^3)
Retention: 1.83 hr
Loading: Surface, 22.9 $m^3/m^2 \cdot d$
Weir: 55.5 $m^3/m \cdot d$

SECONDARY TREATMENT

Type: Diffused air; three-pass
Size: One 9.1m x 6.1m x 3.0m swd
(170.0 m^3)
Retention: 7.5 hr

Diffusers: Ceramic Tubes

Spacing: 9 per pass (2 passes)
12 per pass (1 pass)

Volume: 68.2 m^3
Retention: 3.0 hr
Loading: Surface, 24.4 $m^3/m^2 \cdot d$
Weir, 74.5 $m^3/m \cdot d$

CHLORINATION

Type: Advance
Size: 22.7 kg / day

Chlorine Contact Chamber

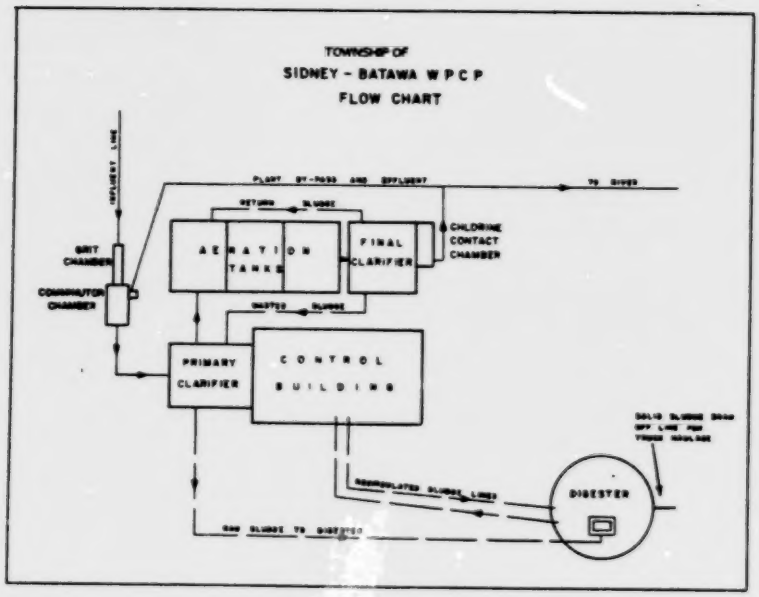
Size: One, 3.0m x 1.2m x 2.4m swd.
Retention: 24 min.

OUTFALL

- to Trent River

SLUDGE HANDLING

Type: Fixed cover, integral heat exchanger coils
Size: One 6.1m x 5.3m
(170.5 m^3)
Loading: 1.41 $Kg/m^3 \cdot mo.$



DESIGN DATA - IMPERIAL

PROJECT Sidney Twp. WPCP

PROJECT NO. 2-0121-82

TREATMENT Activated Sludge

DESIGN FLOW 0.12 mgd

DESIGN POPULATION 1,500

BOD - Raw Sewage 220 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 90%

PRIMARY TREATMENT

Grit Removal

Type: Channels, manually cleaned
Size: Two 9' 3" x 9" x 6" swd
Flow Velocity: 0.6 fps
Retention: 16.6 sec

Comminution

- One Chicago Pump, Model 10A

Screening

One 1½" c-c on comminutor bypass
One 1½" c-c on plant bypass

Primary Sedimentation

Size: One 16' x 16' x 11' swd
(0,130 gal)
Retention: 1.83 hr
Loading: Surface, 468 gal/ft²/day
Weir, 3750 gal/ft/day

SECONDARY TREATMENT

Type: Diffused air; three-pass
Size: One 30' x 20' x 10' swd
(37,400 gal)
Retention: 7.5 hr

Diffusers: Ceramic Tubes

Spacing: 9 per pass (2 passes)
12 per pass (1 pass)

(15,000 gal)
Retention: 3.0 hr
Loading: Surface, 500 gal/ft²/day
Weir, 5000 gal/ft/day

CHLORINATION

Type: Advance
Size: 50 lb/day

Chlorine Contact Chamber

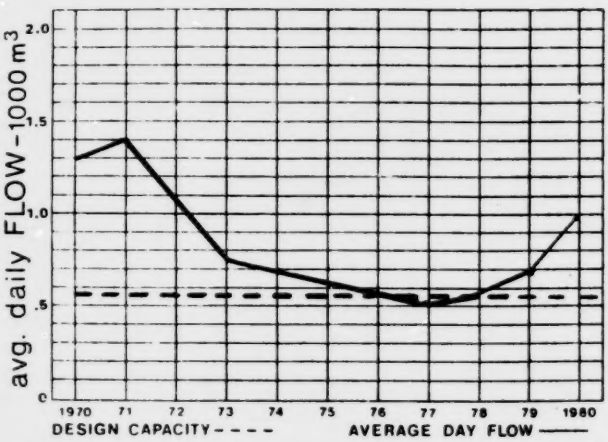
Size: One 10' x 4' x 6' (2,000 gal)
Retention: 24 min

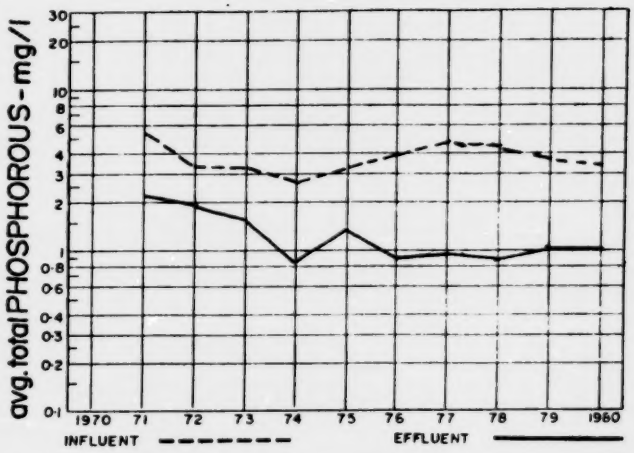
OUTFALL

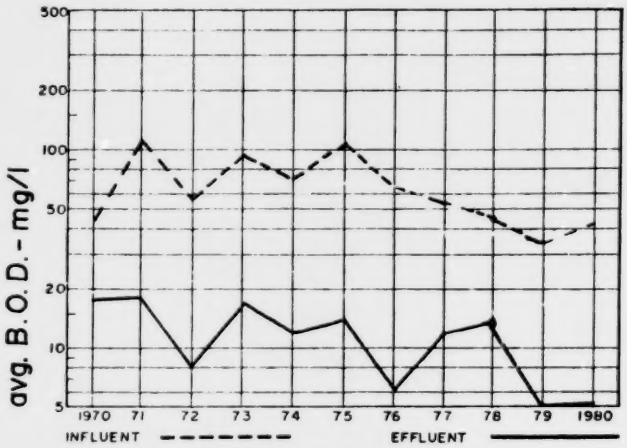
- to Trent River

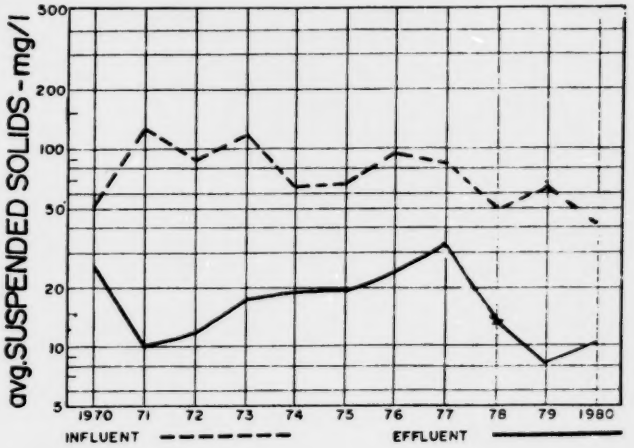
SLUDGE HANDLING

Type: Fixed cover, integral heat exchanger coils
Size: One 20' dia x 17' 4"
(6,800 cu ft or 37,500 gal)
Loading: 1.5 lb/cu ft/mo









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000668 BATAWA WPCP

MUNICIPALITY : SIDNEY TWP (BATAWA)
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 15,821
POPULATION SERVED : 400
PERCENT SERVED : 2.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.568 1000 M3 DESIGN BOD5 : 220.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	46.997	1.516	1.773		10.0	11.0	-	-	27.0	18.0	33	.4	2.3	1.0	56	.061
FEB	39.910	1.370	1.566	.840	75.0	13.5	82	2.4	31.0	13.3	57	.7	1.8	.8	56	.042
MAR	55.676	1.796	4.242	1.220	*	*			*	*			*	*		
APR	36.300	1.210	1.724	1.080	15.0	*			30.4	*			2.1	*		
MAY	32.240	1.040	1.685	1.080	22.0	9.0	59	.4	28.5	16.0	43	.4	4.5	2.0	55	.081
JUN	21.470	.720	1.099	1.000	30.0	4.0	86	.5	50.0	10.0	80	.8	3.5	1.4	59	.045
JUL	17.787	.593	.946		40.0	2.0	95	.6	59.0	14.0	76	.8	6.8	1.3	80	.098
AUG	19.130	.617	.908	.800	23.0	4.0	82	.3	51.0	8.2	83	.8	3.2	.5	83	.051
SEP	16.972	.565	.883	.880	56.5	1.0	98	.9	60.2	5.0	91	.9	3.5	.8	77	.046
OCT	13.867	.447	1.646	.480	48.0	1.3	97	.6	58.0	6.2	89	.7	6.4	.6	90	.080
NOV	23.303	.777	1.080	.540	64.0	3.0	95	1.4	41.5	2.5	93	.9	2.3	.9	60	.033
DEC	37.819	1.219	2.080	.920	82.0	6.0	92	2.8	42.0	10.3	75	1.1	2.5	.9	62	.059
TOTAL	361.471							10.3				7.7				.596
AVERAGE		.989			42.3	5.4	87		43.5	10.3	76		3.5	1.0	70	
MAXIMUM			4.242	1.220												
NO. OF SAMPLES					15	14			46	42			45	40		

DESIGN DATA - METRIC

TRENTON

PROJECT Town of Trenton WPCP

PROJECT NO. 1-0210-69

DESIGN FLOW 15.9 $10^3 m^3/d$

TREATMENT Conventional Secondary

DESIGN BOD 250 mg/l

DESIGN SS 300 mg/l

PUMPING STATIONS

Dundas St. 3 pumps operating at 1150 r/min equipped with 111.9 kW motors Supplying 20.5 $10^3 m^3/d$ @ 38.2m TDH
Standby diesel generator 125 kW @ 156.25 kVA

Bay St. 2 pumps operating at 1150 r/min equipped with 44.7 kW motors
Supplying 80.0 $10^3 m^3/d$ @ 30.5m TDH
Standby diesel generator 125 kW @ 156.25 kVA

PRIMARY TREATMENT

Screening - .91m barminutor units

Grit Removal

One aerated grit tank 15.4m x 4.8m x 3.4m deep @ DWF

Primary Clarifiers

- Two rectangular tanks each 15.5m x 9.8m x 3.7m SWD @ 38.2 $m^3/m^2.d$
- Sludge collection by chain flight longitudinal & cross collectors.
- Three plunger-type raw sludge and sludge transfer pumps, each rated @ 7.57 l/s @ 24.4m TDH with 5.6 kW motors.
- Scum collector flights at the surface
- Two torque flow scum pumps rated at 3.8 l/s @ 18.3m TDH with .5 kW 1800 RPM motors.

Vortex Chambers

- One V.C. to bypass 2.5 DWF to chlorine contact tank after primary clarifier.
- Two V.C.'s to transfer 2 DEF from aeration tanks to final clarification tanks.

SECONDARY TREATMENT

Aeration Tanks

Two aeration tanks 40.2m x 8m x 4.6m deep with two passes in each tank. 4.15 hours detention @ DWF plus 30% return sludge.

Blower Equipment

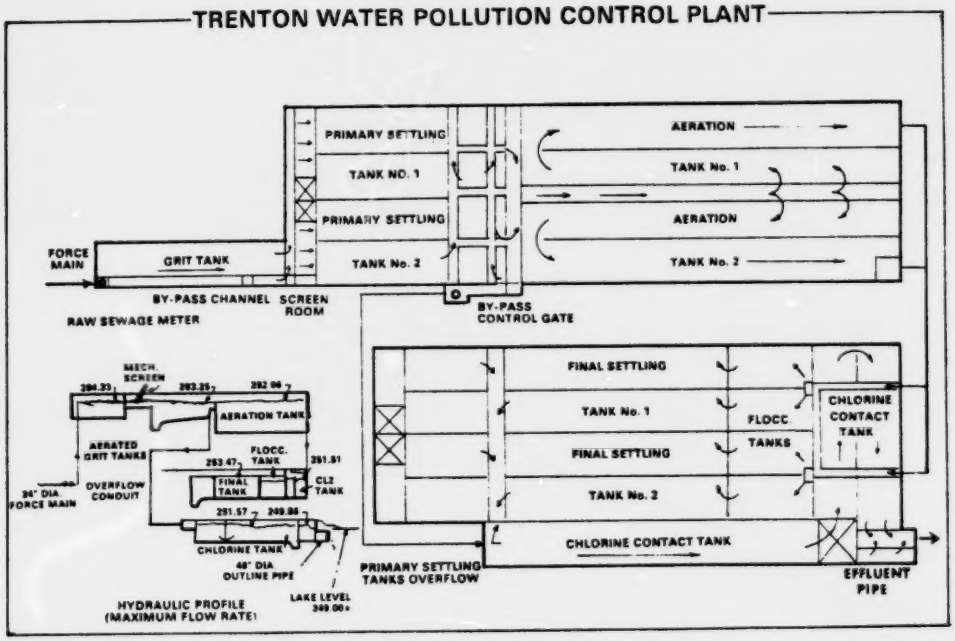
Four 1170.1 l/s centrifugal units for the aeration tanks and channel aeration 149.1 kW 3600 RPM motors.
Two 54.3 l/s positive displacement units for the grit tank.
1200 RPM motors.

Final Clarifiers

- Two rectangular tanks 41.4m x 9.8m x 3.7m SWD @ 39.1 $m^3.m^2.d$ Sludge collection by chain flight longitudinal and cross collectors.
- Two horizontal non-clog return activated sludge pumps each rated @ 184 0 l/s @ 17.7m TDH driven by 44.7 1200 RPM motors

Chlorine Contact Chamber

- Two gas chlorinators. 153.6 kg/day or influent, effluent and return activated sludge. 87min. detention.
- Scum and sludge collection - travelling bridge on first pass of contact chamber.
- Two sludge and scum torque flow pumps rated at 3.8 l/s @ 24.4m TDH driver by 11.2kW 1800 RPM motors.



DESIGN DATA - IMPERIAL

PROJECT Town of Trenton WPCP

PROJECT NO. 1-0210-69

DESIGN FLOW 3.5 MIGD

TREATMENT Conventional Secondary

DESIGN BOD. 250 mg/l

DESIGN SS 300 mg/l

PUMPING STATIONS

Dundas St. 3 pumps operating at 1150 RPM equipped with 150 Hp motors supplying 4.5 MIGD @ 109' TDH.
Standby diesel generator 125 kW @ 156.25 kVA

Bay St. 2 pumps operating at 1150 RPM equipped with 60 Hp motors supplying 1.8 MIGD @ 100' TDH.
Standby diesel generator 125 kW @ 156.25 kVA.

PRIMARY TREATMENT

Screening - 2.36" barminutor units.

Grit Removal

One aerated grit tank 51'x15.75x11' deep @ DWF.

Primary Clarifiers

- Two rectangular tanks, each 78'x32'x12' SWD @ 700 IGPD/ft^2.
- Sludge collection by chain flight longitudinal & cross collectors.
- Three plunger-type raw sludge and sludge transfer pumps, each rated at 100 IGPM @ 80' TDH with 7½ Hp motors.
- Scum collector flights at the surface.
- Two torque flow scum pumps rated at 50IGPM @ 60' TDH with 10 Hp, 1800 RPM motors.

Vortex Chambers

- One V.C. to bypass 2.5 DWF to chlorine contact tank after primary clarifier.
- Two V.C.'s to transfer 2 DWF from aeration tanks to final clarification tanks.

SECONDARY TREATMENT

Aeration Tanks

Two aeration tanks 132'x32'x15' deep with two passes in each tank. 4.15 hours detention @ DWF plus 30% return sludge.

Blower Equipment

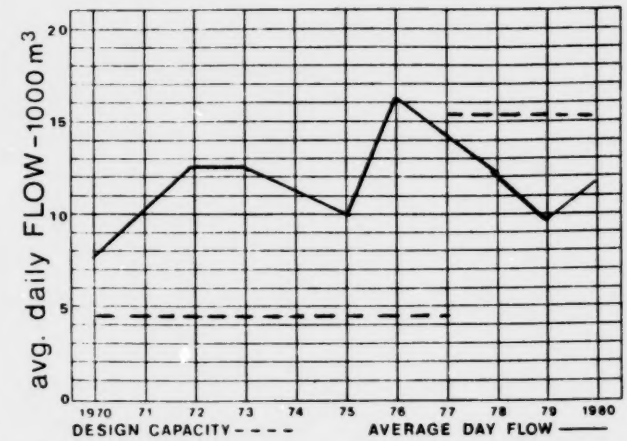
- Four 2800 CFM centrifugal units for the aeration tanks and channel aeration 200 Hp 3600 RPM motors.
- Two 130 CFM positive displacement units for the grit tank. 10 Hp 1200 RPM motors.

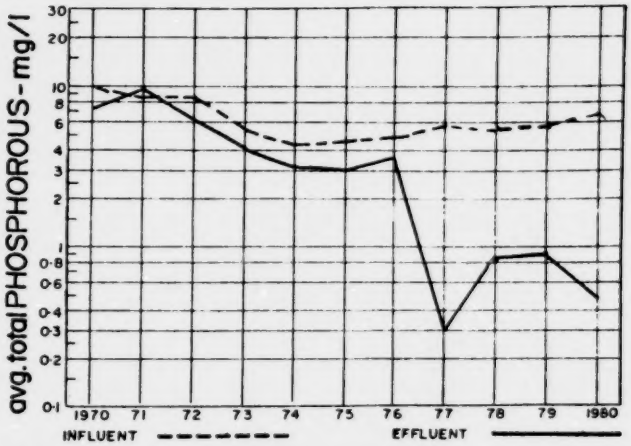
Final Clarifiers

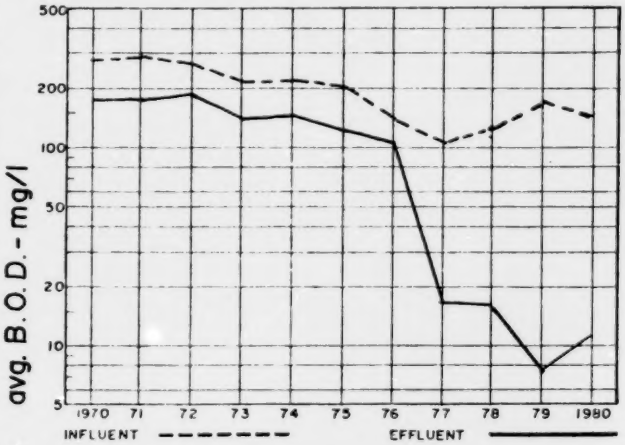
- Two rectangular tanks 136'x32'x12' SWD @ 830 IGPD/ft^2. Sludge collection by chain flight longitudinal and cross collectors.
- Two horizontal non-clog return activated sludge pumps each rated @2430 GPM @ 58' TDH driven by 60 Hp 1200 RPM motors.

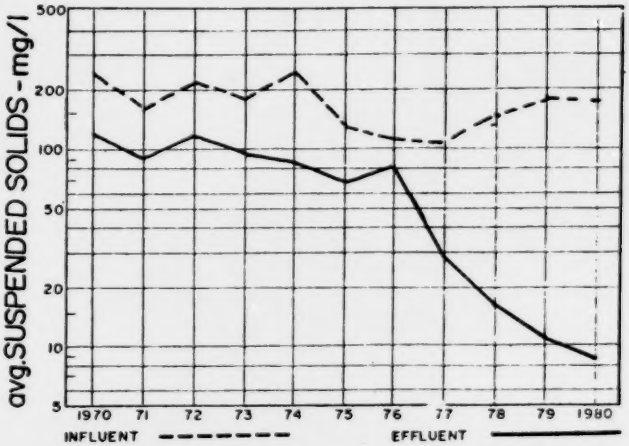
Chlorine Contact Chamber

- Two gas chlorinators, 1000 lb/day for influent, effluent and return activated sludge. 87min. detention.
- Scum and sludge collection by travelling bridge on first pass of contact chamber.
- Two sludge and scum torque flow pumps rated at 50 GPM @ 80' TDH driven by 15 HL 1800 RPM motors.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000775 TRENTON WPCP

MUNICIPALITY : TRENTON
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 14,784
POPULATION SERVED : 15,000
PERCENT SERVED : 101.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 15.911 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	281.920	9.090	10.820	44.000	142.0	8.5	94	37.6	145.0	13.0	91	37.2	6.6	.6	90	1.692
FEB	218.740	7.540	10.980	22.000	238.0	9.0	96	50.0	287.0	8.7	96	60.8	12.0	.7	94	2.470
MAR	393.500	12.690	30.430	60.000	210.0	10.0	95	78.7	216.0	11.0	94	80.6	6.9	1.2	82	2.243
APR	468.230	15.600	21.380	40.000	72.0	10.0	86	29.0	139.2	6.5	95	62.1	7.6	.6	91	3.254
MAY	413.110	13.320	19.630	24.000	88.0	19.0	78	28.5	185.0	7.5	95	73.3	6.3	.9	85	2.231
JUN	365.300	12.170	15.150	26.000	73.0	23.0	68	18.2	163.0	7.0	95	56.9	6.3	.4	93	2.144
JUL	368.460	11.880	13.500	52.000	119.0	25.0	78	34.6	117.0	7.0	94	40.5	5.1	.3	94	1.769
AUG	359.350	11.590	14.940	42.000	164.0	13.0	92	54.2	140.0	6.1	95	48.1	4.5	.1	96	1.563
SEP	329.880	10.990	13.830	20.000	196.0	2.0	98	63.9	182.0	6.4	96	57.9	6.4	.7	88	1.864
OCT	371.930	11.990	14.860	24.000	144.0	6.5	95	51.1	251.0	4.9	98	91.5	6.8	.2	96	2.447
NOV	374.910	12.490	14.280	24.000	145.0	8.8	93	51.0	211.0	7.6	96	76.2	7.0	.2	96	2.564
DEC	405.200	13.070	18.450	35.000	152.0	14.0	90	55.9	151.0	6.0	96	58.7	6.2	.3	94	2.374
TOTAL	4350.530							553.2				744.3				26.615
AVERAGE		11.868			145.2	12.4	91		182.2	7.6	95		6.8	.5	92	
MAXIMUM			30.430	60.000												
NO. OF SAMPLES					38	38			252	252			56	68		

Ministry of the Environment
Ontario

Northeastern Region

⑤

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

Sault Ste. Marie
445 Albert St. E.
705-949-4640

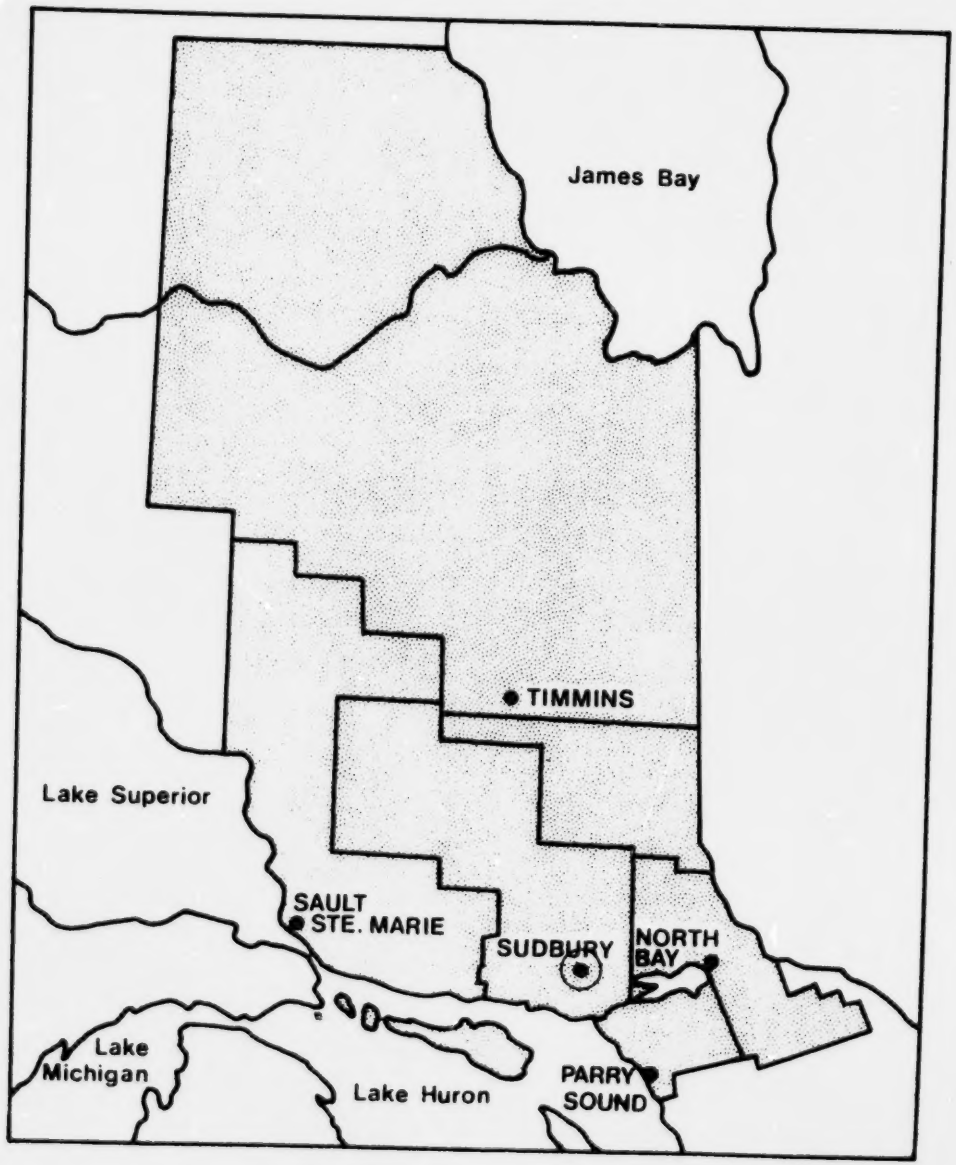
Timmins
83 Algonquin Blvd. W.
705-264-9474

Parry Sound
74 Church St.
705-746-2139

Ministry of the Environment
Ontario

Northeastern Region

⑤



DESIGN DATA - METRIC

NORTH BAY

PROJECT: City of North Bay WPCP

PROJECT NUMBER: 1-0161-68

TREATMENT: Conventional Secondary

DESIGN FLOW: 36.4 $10^3 m^3/d$

BOD - Raw Sewage 150 mg/l
- Removal 85%

PRIMARY TREATMENT

GRIT REMOVAL
Type: Aerated grit tanks
Size: two, (each) 14.6m x 4.9m x 4.0m awl
(each: 238.2m^3
Retention: (each) 22.4 min

SCREENS
Type: two, Mechanical

SEWAGE LIFT PUMPS
Type: WORTHINGTON
Two, variable-speed
One, constant-speed
Size: (total) 72.7 $10^3 m^3/d$

PRIMARY SEDIMENTATION
Type: Four, 72.7m x 9.1m x 3.4m
(3369.9m^3 total)
Retention: 2.2 hr

SECONDARY TREATMENT

AERATION TANKS
Type: Diffused Air, two-pass
Size: Two 56.4m x 9.1m x 3.7m per pass
(5037.0m^3 total)
Retention: 3.3 hr

RETURN SLUDGE PUMPS
Type: WORTHINGTON
Size: Two, 41.6 l/s

SECONDARY SEDIMENTATION
Type: WALKER RSX
Size: Four, 18.3m x 18.3m x 3.4m
(4493.3m^3 total)
Retention: 3.0 hr
Loading: Surface 26.9m^3/m^2.d
Weir - 119.2m^3/m.d

CHLORINATION
Type: four-pass
Size: Two, 11.9m x 2.4m x 1.2m each
(448.7m^3 total)
Retention: 18 min.

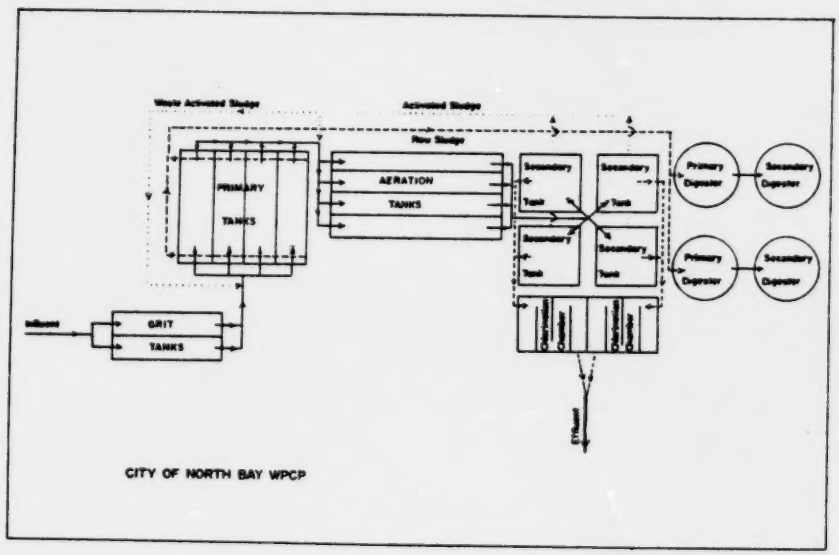
OUTFALL
339.9m into Lake Nipissing

SLUDGE HANDLING

DIGESTION SYSTEM
Type: Two-Stage

Primary --
Type: DORR
Size: Two, 19.8m dia x 6.7m swd
(4141.4m total)

Secondary -
Size: Two, 19.8m dia. x 6.7m swd
(4141.4m^3 total)



CITY OF NORTH BAY WPCP

DESIGN DATA - IMPERIAL

PROJECT: City of North Bay WPCP

PROJECT NUMBER:

TREATMENT: Conventional Secondary

DESIGN FLOW: 8.0 mgd

BOD - Raw Sewage 150 mg/l
- Removal 85%

PRIMARY TREATMENT

GRIT REMOVAL
Type: Aerated grit tanks
Size: two, (each) 48' x 16' x 13' awl
(each: 82,300 I.G.)
Retention: (each) 22.4 min

SCREENS
Type: two, Mechanical

SEWAGE LIFT PUMPS
Type: WORTHINGTON
Two, variable-speed
One, constant-speed
Size: (total) 16 mgd

PRIMARY SEDIMENTATION
Type: Four, 90' x 30' x 11'
(741,300 I.G. total)
Retention: 2.2 hr

SECONDARY TREATMENT

AERATION TANKS
Type: Diffused Air, two-pass
Size: Two, 185' x 20' x 12' per pass
(1,108,000 I.G. total)
Retention: 3.3 hr

RETURN SLUDGE PUMPS
Type: WORTHINGTON
Size: Two, 550 gpm

SECONDARY SEDIMENTATION
Type: WALKER RSX
Size: Four, 60' x 60' x 11'
(988,400 I.G. total)
Retention: 3.0 hr
Loading: Surface-550 gal/ft^2/day
Weir - 8,000 gal/ft/day

CHLORINATION
Type: four-pass
Size: two, 39' x 7.8' x 6.5' each pass
(98,700 I.G. total)
Retention: 18 min.

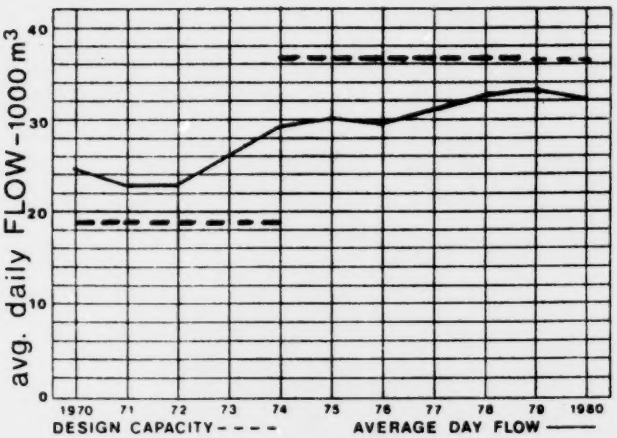
OUTFALL
-1115 ft into Lake Nipissing

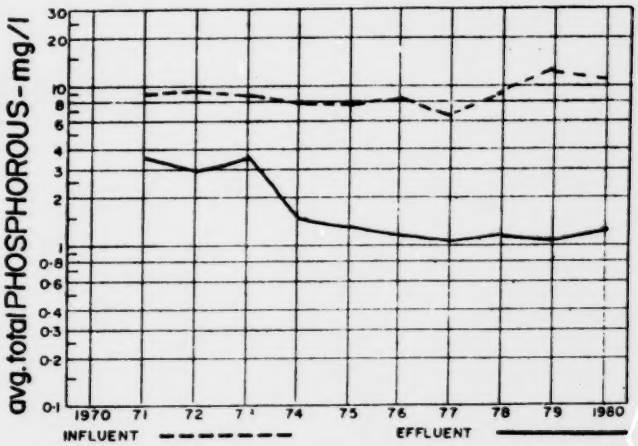
SLUDGE HANDLING

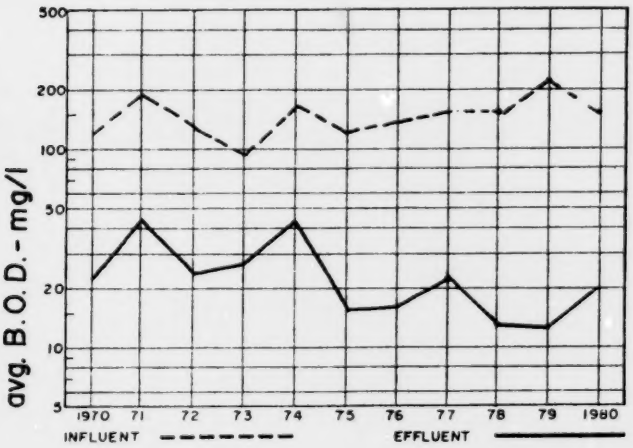
DIGESTION SYSTEM
Type: Two-Stage

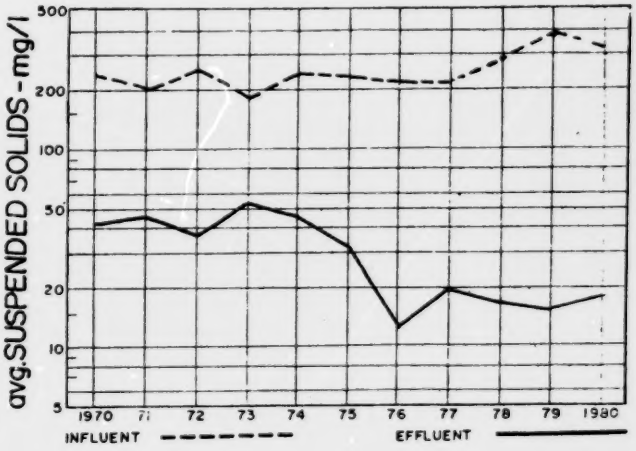
Primary --
Type: DORR
Size: Two, 65' dia x 22' swd
(911,000 I.G. total)

Secondary --
Size: Two, 65' dia x 22' swd
(911,000 I.G. total)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000533 NORTH BAY MPCP

MUNICIPALITY : NORTH BAY
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION	:	50,417
POPULATION SERVED	:	45,000
PERCENT SERVED	:	89.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 36.368 1000 M3 DESIGN BOD5 : 150.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	837.780	27.000			276.0	18.0	93	216.1	502.0	20.0	96	403.8	11.5	1.2	89	8.629
FEB	704.857	24.305			215.0	17.0	92	139.5	438.0	19.0	95	295.3	14.9	1.8	87	9.234
MAR	1015.120	32.745	63.830		173.0	24.0	86	151.2	323.0	31.0	90	296.4	13.0	2.0	84	11.166
APR	1353.390	45.110			106.0	21.0	80	115.0	258.0	21.0	91	320.7	6.3	.9	85	7.308
MAY	973.250	32.000			154.0	18.0	88	132.3	243.0	20.0	91	217.0	10.3	1.4	86	8.662
JUN	925.700	30.860	49.140		158.0	19.0	87	128.6	304.0	17.0	94	265.6	12.3	1.8	85	9.720
JUL	1009.850	32.580	42.960	62.730	173.0	16.0	90	158.5	246.0	16.0	93	232.2	8.9	1.2	85	7.692
AUG	879.969	28.386			171.0	23.0	86	130.2	339.0	14.0	95	285.9	11.8	1.4	88	9.152
SEP	1109.680	36.990	55.650		150.0	20.0	86	144.2	338.0	16.0	95	357.3	11.9	1.3	89	11.763
OCT	1141.364	36.820	47.640	72.740	93.0	17.0	81	86.7	305.0	10.8	96	335.7	9.9	.7	92	10.432
NOV	955.387	31.840	54.550	1279.340	133.0	28.0	78	100.3	328.0	13.2	95	300.7	11.7	1.1	90	10.108
DEC	845.556	27.280	35.570	44.550	130.0	19.0	85	93.8	549.0	22.0	95	445.6	15.4	1.6	89	11.669
TOTAL	11751.903							1596.9				3756.7				115.535
AVERAGE		32.160			161.0	20.0	87		347.7	18.3	94		11.4	1.3	87	
MAXIMUM			63.830	1279.340												
NO. OF SAMPLES					27	29			213	204			38	51		

DESIGN DATA - METRIC

STURGEON FALLS

PROJECT: Town of Sturgeon Falls WPCP
PROJECT NO.: 1-0012-66
TREATMENT: Conventional Activated Sludge
DESIGN FLOW: 4.546 $10^3 m^3/d$
BOD: Raw Sewage 180 mg/l
SS: Raw Sewage 200 mg/l

PUMPING STATIONS:
Two, prefabricated, each with 94.6 l/s pump
One, built in place, 28.4 l/s pump
One, built in place, 78.7 l/s pump

PRETREATMENT

DETRITOR:
One, 3.7m dia. x 1.6m swd
Volume: $5.0m^3$ Detention: 1.6 min.

COMMINUTOR:
Capacity: 18.1 $10^3 m^3/d$

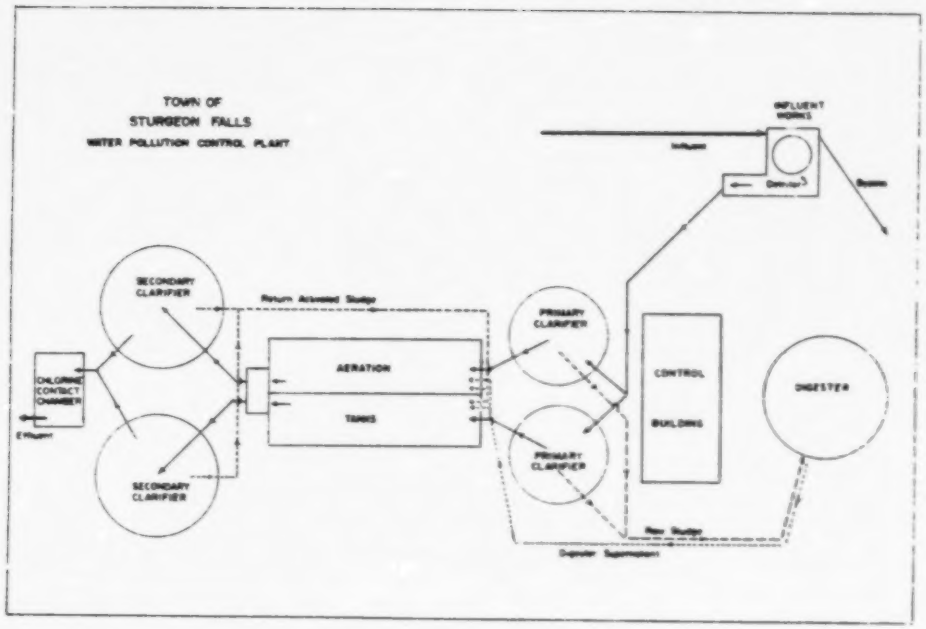
BAR SCREENS:
In channel, after comminutor

PRIMARY CLARIFIERS:
Two, 11.0m dia. x 3.0m swd
Volume: (total) $577.3m^3$
Detention 3.0 hours
Overflow rate: $24.0 m^3/m^2 \cdot d$

AERATION TANKS:
Two, 12.8m x 5.5m x 4.3m
Volume: (total) $600.m^3$
Detention: 3.2 hours
Blowers: two, 1805.3 l/s

SECONDARY CLARIFIERS
Two, 11.0m dia x 3.0m swd
Volume: (total) $577.3m^3$
Detention: 3.0 hours
Surface overflow rate: $24.0 m^3/m^2 \cdot d$

DIGESTER:
Size : 13.7m dia. x 6.1m swd
Volume: $900.6m^3$
CHLORINE CONTACT CHAMBER:
Four passes, each 4.9m x 1.9m x 3.6m swd (avg)
Volume: $131.0m^3$ Detention: 42 min.



DESIGN DATA - IMPERIAL

Project	Town of Sturgeon Falls WPCP
Project No.	1-0012-66
Treatment:	Conventional Activated Sludge
Design Flow:	1 MGD
BOD:	Raw Sewage 180 mg/l
SS:	Raw Sewage 200 mg/l

PUMPING STATIONS:
Two, prefabricated, each with 1250 IGPM pump
One, built in place, 375 IGPM pump.
One, built in place, 1040 IGPM pump.

PRETREATMENT

DETRITOR:
One, 12' dia. x 1.6' swd
Volume: 1100 I. Gal Detention: 1.6 min.

COMMINUTOR:
Capacity: 4 MGD

BAR SCREENS:
In channel, after comminutor

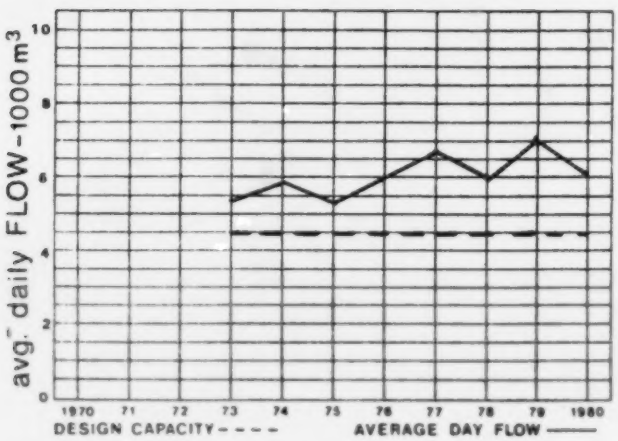
PRIMARY CLARIFIERS:
Two, 36' dia. x 10' swd
Volume: (total) 127,000 I. Gal.
Detention: 3.0 hours
Overflow rate: 490 I. $Gal/ft^2/day$

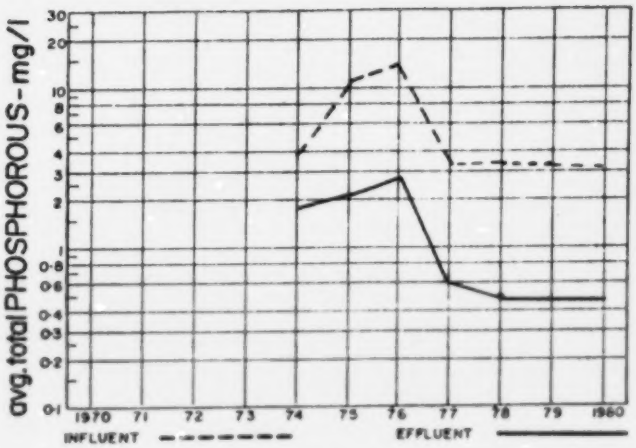
AERATION TANKS:
Two, 42' x 18' x 14' swd
Volume: (total) 132,000 I. Gal.
Detention: 3.2 hours
Blowers: two, each 4320 cim

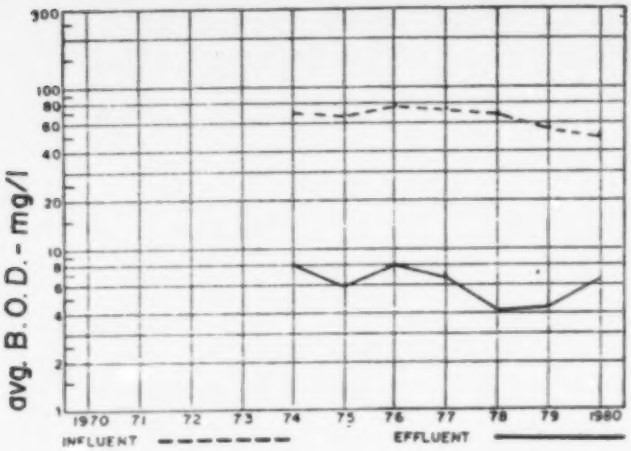
SECONDARY CLARIFIERS:
Two, 36' dia. x 10' swd
Volume: (total) 127,000 I. gal.
Detention: 3.0 hours
Surface overflow rate: 490 $gal/ft^2/day$.

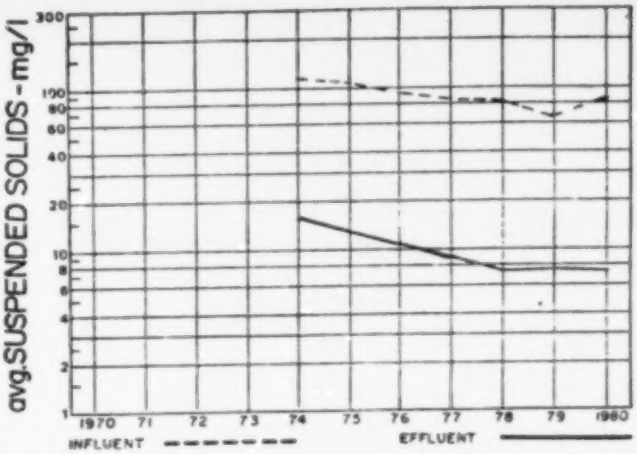
DIGESTER:
45' dia. x 30' swd
Volume: 31800 ft^3

CHLORINE CONTACT CHAMBER:
Four passes, each 16' x 6.2' x 11.75' swd (avg)
Volume: 28000 I. Gal. Detention: 42 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001435 STURGEON FALLS MPCP

MUNICIPALITY : STURGEON FALLS
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION	: 6,289
POPULATION SERVED	: 6,199
PERCENT SERVED	: 98.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.546 1000 M3 DESIGN BOD5 : 150.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	165.024	5.326	7.600	16.000	78.0	6.0	92	11.8	76.0	8.0	89	11.2	4.3	1.0	76	.545
FEB	138.032	4.800	5.266	16.000	60.0	6.5	89	7.3	64.0	6.0	90	8.0	3.9	1.4	64	.345
MAR	228.842	7.380	13.280	20.500	63.0	16.0	74	10.7	54.0	14.0	74	9.1	3.3	1.2	63	.481
APR	303.965	10.132	14.372	20.500	31.0	4.0	87	8.2	50.0	6.0	88	13.3	1.9	.3	84	.486
MAY	189.765	6.120	9.600	20.500	54.0	3.0	94	9.6	58.0	7.0	87	9.6	3.7	.5	84	.590
JUN	161.870	5.396	11.800	20.475	49.0	3.0	93	7.4	68.0	6.0	91	10.0	3.0	.3	87	.422
JUL	212.069	6.840	11.079	20.475	39.0	2.7	93	7.6	107.0	6.0	94	21.4	3.3	.4	87	.615
AUG	181.105	5.842	8.300	20.475	38.0	4.5	88	6.0	91.0	8.0	91	15.0	2.2	.5	75	.301
SEP	206.849	6.894	14.067	20.475	53.0	3.3	93	10.2	202.0	9.0	95	39.9	3.7	.3	91	.699
OCT	207.900	6.700	11.700	16.000	48.0	5.3	88	8.8	61.0	6.0	90	11.4	2.0	.3	83	.347
NOV	156.614	5.220	5.800	16.000	69.0	5.0	92	10.0	94.0	5.0	94	13.9	3.0	.1	94	.443
DEC	140.759	4.540	4.800	21.800	46.0	14.0	69	4.5	74.0	7.0	90	9.4	3.0	.3	88	.372
TOTAL	2292.794							102.8				172.6				5.646
AVERAGE		6.266			52.3	6.1	88		83.2	7.3	91		3.1	.5	81	
MAXIMUM			14.372	21.800												
NO. OF SAMPLES					24	23			72	70			24	22		

DESIGN DATA - METRIC

VALLEY EAST (H., V.C. & V.T.)

PROJECT: Valley East WPCP

PROJECT NO: 1-0039-66

TREATMENT: Conventional Secondary

DESIGN FLOW: 11.4 $10^3 m^3/d$

RAW SEWAGE P.S.

Type: One, Smart-Turner
Size: 75.7 l/s

Type: Three
Size: each 151.4 l/s

AERATED GRIT TANK

Size: 4.6 m x 4.6 m x 3.0 m
Volume: 63.6 m^3
Retention: 8.1 min

PRIMARY CLARIFIERS

Type: Two, 2-pass
Size: Each pass 3.8 m x 30.5m x 2.9 m swd
Volume (Total): 1345.6 m^3
Retention: 2.8 hr.

AERATION TANKS

Type: Two, rectangular
Size: Each 7.6 m x 51.8 m x 4.3 m
Volume (Total): 3377.7 m^3
Retention: 7.1 hr

SECONDARY CLARIFIERS

Type: Two, 2-pass
Size: Each pass
4.8 m x 38.1 m x 2.9 m swd
Volume (total): 2123.0 m^3
Retention: 4.5 hr.

SLUDGE DIGESTION

PRIMARY DIGESTER

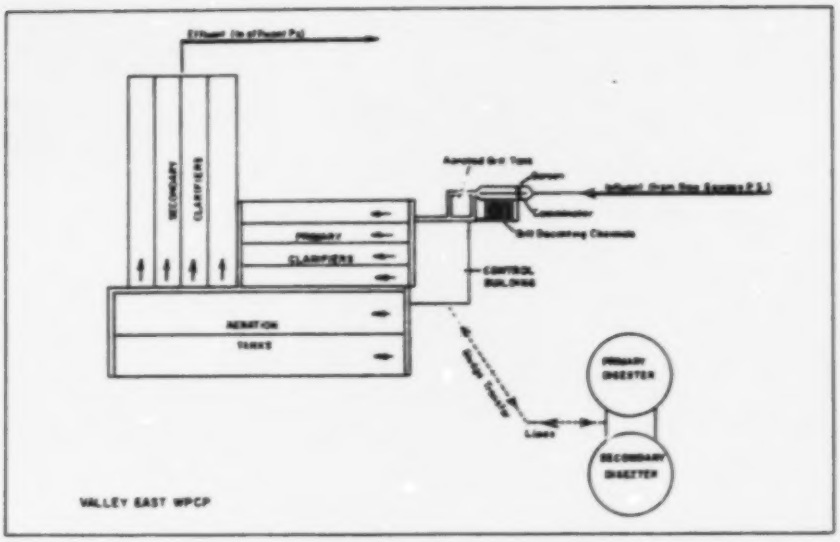
Size: 15.2 m I.d. x 4.3 m swd
Volume: 1113.8 m^3

SECONDARY DIGESTER

Size: 15.2 m I.d. x 4.3 m swd
Volume: 1113.8 m^3

EFFLUENT P.S.

Type: Two, Worthington
Size: Each 45.5 l/s



DESIGN DATA - IMPERIAL

PROJECT: Valley East WPCP

PROJECT NO. 1-0039-66

TREATMENT: Conventional Secondary

DESIGN FLOW: 2.5 MIGD

RAW SEWAGE P.S.
Type: One, Smart-Turner
Size: 1000 IGPM

Type: Three,
Size: Each 2000 IGPM

AERATED GRIT TANK
Size: 15' x 15' x 10' swd
Volume: 14,000 I.G.
Retention: 8.1 min

PRIMARY CLARIFIERS
Type: Two, 2-pass
Size: Each pass 12.5'x100'x9.5'swd
Volume(total): 796,000 I.G.
Retention: 2.8 hr

AERATION TANKS
Type: Two, rectangular
Size: each 25'x170'x14'swd
Volume(total): 741,000 I.G.
Retention: 7.1 hr

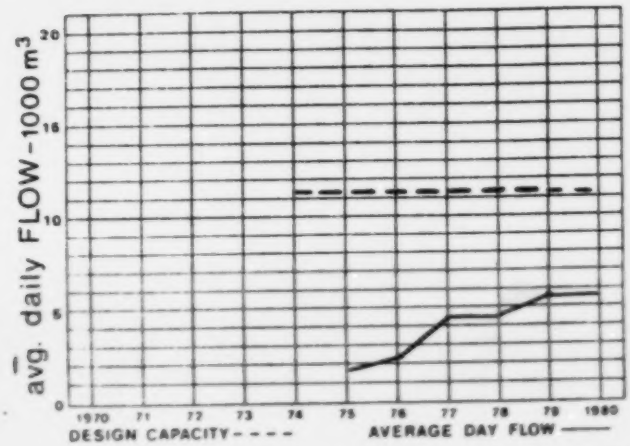
SECONDARY CLARIFIERS
Type: Two, 2-pass
Size: Each pass
15.75' x 125' x 9.5' swd
Volume(total): 467,000 I.G.
Retention: 4.5 hr

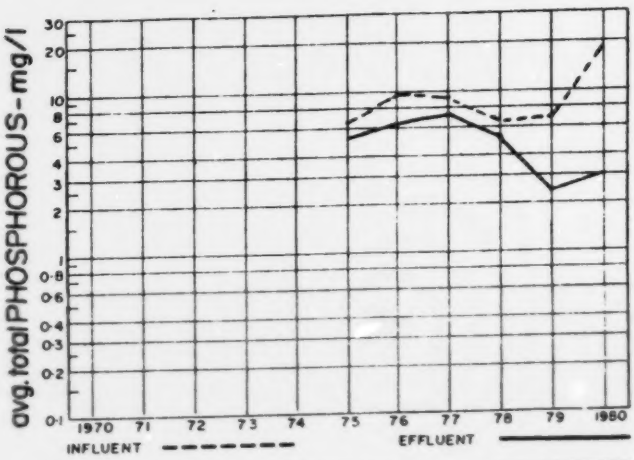
SLUDGE DIGESTION

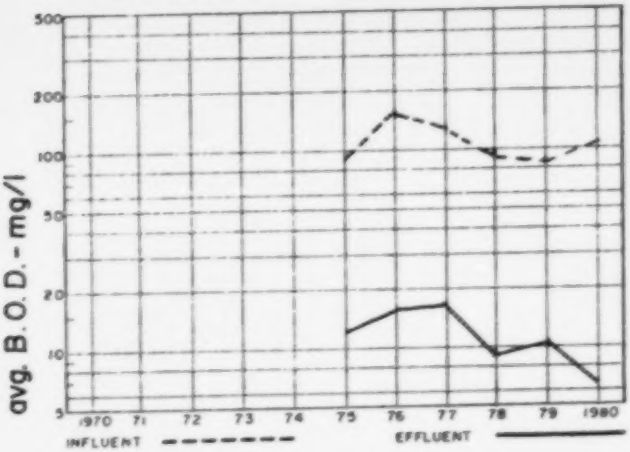
PRIMARY DIGESTER
Size: 50' I.d. x 14' swd
Volume: 245,000 I.G.

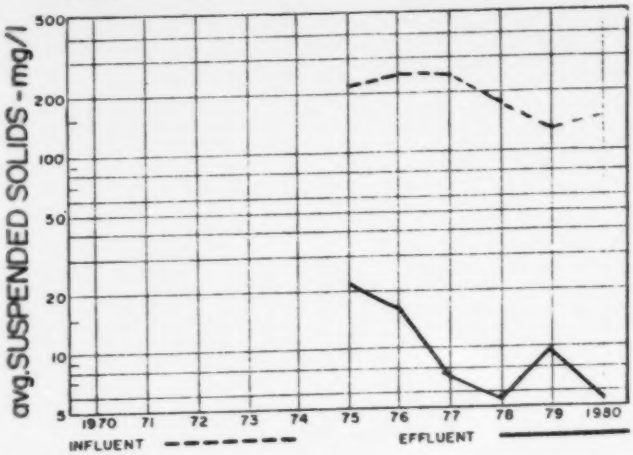
SECONDARY DIGESTER
Size: 50' I.d. x 14' swd
Volume: 245,000 I.G.

EFFLUENT P.S.
Type: Two, Worthington
Size: Each 4323 IGPM









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001541 HANMER, VAL CARON, VAL THERESE

MUNICIPALITY : VALLEY EAST
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 20,825
POPULATION SERVED : 14,700
PERCENT SERVED : 70.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 11.365 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG REDUCTION	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG REDUCTION	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG REDUCTION
JAN/80-DEC/80																
JAN	125.428	4.046	4.590		85.0	4.0	95	10.1	252.0	5.0	98	30.9	9.3	6.1	34	.401
FEB	105.511	3.638	4.100		128.0	10.0	92	12.4	161.0	4.2	97	16.5	71.5	5.2	92	6.995
MAR	114.936	3.708	4.960		200.0	7.5	96	22.1	171.0	7.2	95	18.8	12.5	4.0	68	.977
APR	228.574	7.619	9.540		31.5	7.8	75	5.4	106.0	5.3	95	23.0	7.4	1.3	82	1.394
MAY	243.144	7.843	12.200		96.0	4.0	95	22.3	112.8	5.1	95	26.1	5.7	.5	90	1.259
JUN	215.985	7.199	7.770		98.5	6.0	93	19.9	99.0	6.0	93	20.0	5.6	1.4	75	.907
JUL																
AUG				OPERATIONAL		SWITCH		TO		MUNICIPAL						
SEP																
OCT																
NOV																
DEC																
TOTAL	1033.578							92.5				135.6				11.933
AVERAGE		5.676			106.5	6.5	93		150.3	5.4	96		18.6	3.0	83	
MAXIMUM			12.200													
NO. OF SAMPLES					7	7			11	10			7	7		

EXTENDED AERATION/ CONTACT STABILIZATION PLANTS

Ministry of the Environment
Ontario

Southwestern Region
①

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Ministry of the Environment
Ontario

Southwestern Region

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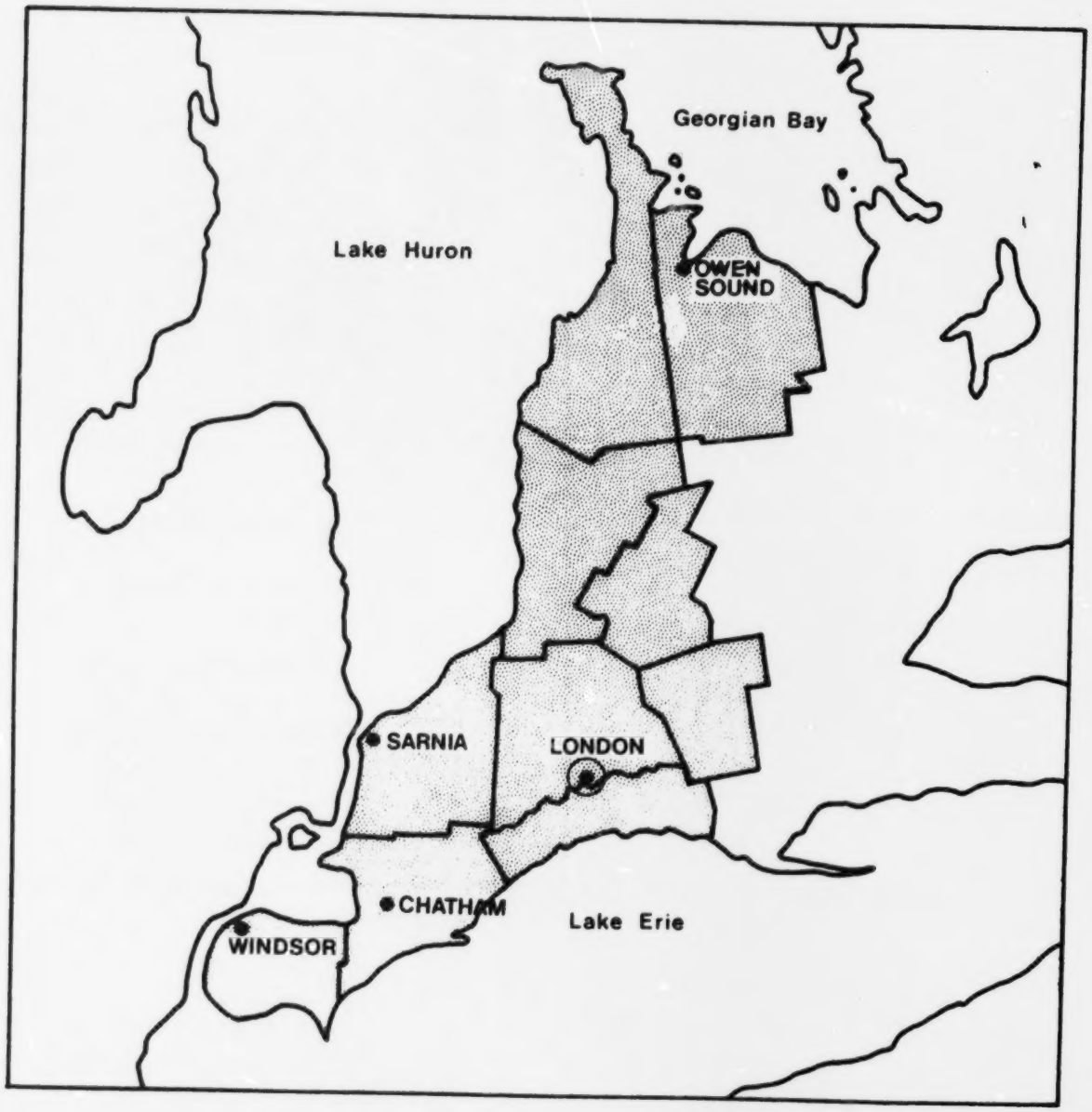
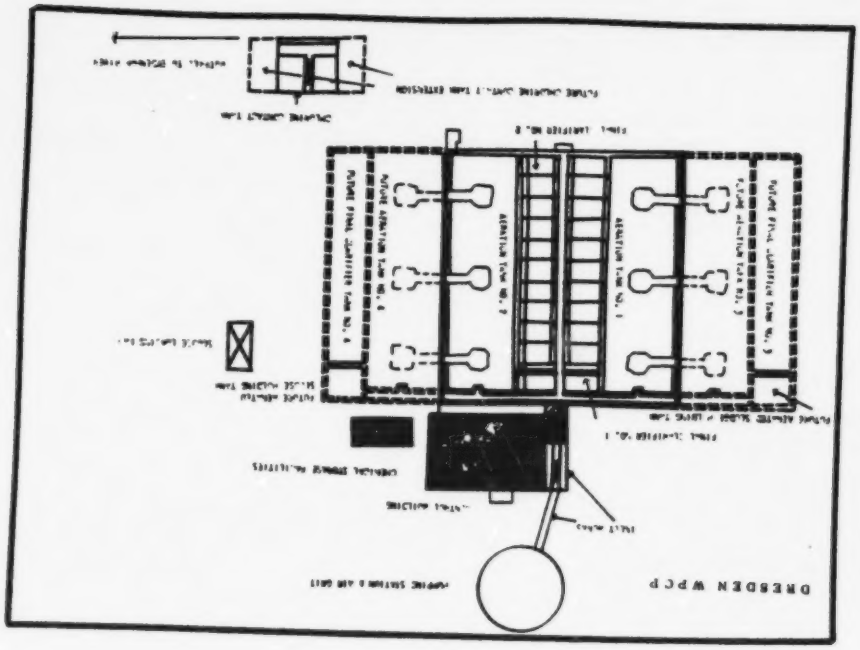
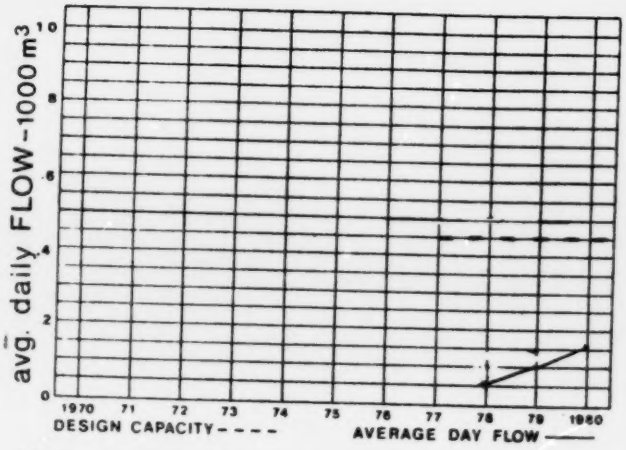
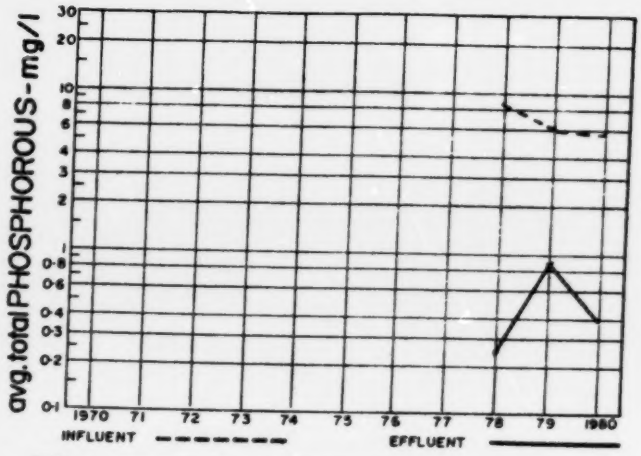
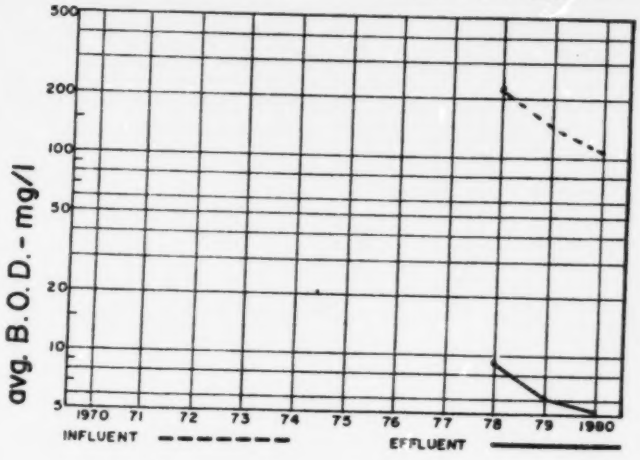
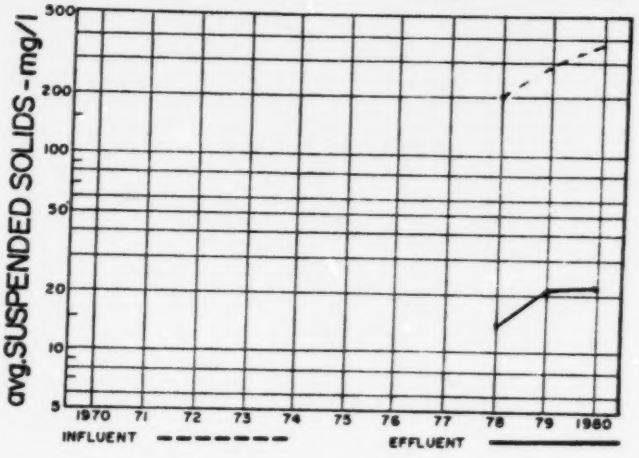



DRESDEN WPCP









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002014 DRESDEN MPCP

MUNICIPALITY : DRESDEN
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 3,830
POPULATION SERVED : 2,200
PERCENT SERVED : 57.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.546 1000 M3 DESIGN BOD5 : 264.0 MG/L DESIGN SUSP.SOLIDS : 218.0 MG/L

	<— FLOW DATA				—><—BIOCHEMICAL OXYGEN DEMAND—><				—><— SUSPENDED SOLIDS —><				—><— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	38.891	1.252	1.528	3.046	65.6	6.0	90	2.3	291.0	31.9	89	10.0	4.7	.5	88	.163
FEB	32.842	1.132	1.405	3.046	88.8	7.2	91	2.6	303.8	19.6	93	9.3	5.9	.5	91	.176
MAR	39.405	1.271	1.668	3.046	82.0	8.3	89	2.9	628.8	18.8	97	24.0	5.6	.5	91	.201
APR	24.688	.823	1.432	7.996	67.6	5.0	92	1.5	285.6	26.8	90	6.3	12.8	.3	97	.308
MAY	21.273	.686	.872	7.021	153.8	6.8	95	3.1	666.0	22.8	96	13.6	7.7	.4	94	.156
JUN	20.632	.688	.982	7.021	74.8	3.7	95	1.4	529.5	15.8	97	10.5	5.8	.3	94	.113
JUL	38.855	1.253	3.246	8.778	88.0	6.6	92	3.1	270.7	17.9	93	9.8	4.0	.3	92	.144
AUG	61.197	1.974	3.247	12.286	135.0	4.2	96	8.0	248.2	23.1	90	13.7	5.6	.3	94	.323
SEP	80.866	2.696	3.969	12.480	130.8	3.2	97	10.3	260.3	16.3	93	19.7	4.0	.3	90	.293
OCT	30.446	.982	2.137	8.386	107.0	4.3	95	3.1	327.7	30.8	90	9.0	4.9	.7	85	.129
NOV	23.590	.786	1.023	6.631	181.0	3.8	97	4.1	353.3	10.6	97	8.0	5.9	.3	94	.131
DEC	23.635	.762	1.926	6.633	110.6	5.2	95	2.4	340.1	14.2	95	7.7	4.9	.3	93	.108
TOTAL	436.320							45.3				142.2				2.245
AVERAGE		1.192			107.0	5.3	94		375.4	20.7	94		5.9	.4	93	
MAXIMUM			3.969	12.480												
NO. OF SAMPLES																

DESIGN DATA - METRIC

BELLE RIVER (HAIDSTONE)

PROJECT: Town of Belle River

PROJECT NO.: 1-0305-72

TREATMENT: Extended Aeration

DESIGN FLOW: 6.82 $10^3 m^3/d$

BOD - Raw Sewage 300 mg/l

SS - Raw Sewage 300 mg/l

PUMPING STATION

Type: Two raw sewage pumps (one stand by)
Rate: 32.55 l/s @ 9.75 m TDH
Type: Two vertical centrifugal pumps
Rate: 82.03 l/s @ 20.73m TDH

PRIMARY TREATMENT

Inlet Works
Type: 24.77 $10^3 m^3$ bar screens, 304.8 mm parshall flume, comminutor and by-pass

Grit Removal
Type: Aerated grit tank equipped with air diffusion equipment 20.9-41.8 l/s
Volume: (24.77 $10^3 m^3$) 41.77 m^3
Size: 3.0m x 3.0m x 4.5m WD

SECONDARY TREATMENT

Aeration Tanks
Volume: 38.41 $10^3 m^3$ Two 918.98 m^3 (1.84 $10^3 m^3$ total) tanks
Contact Zone: 209.28m^3
Reaeration Zone: 709.70m^3
Aeration tanks are equipped with air diffusion equipment allowing 553.7 l/s
Contact Zone: 6.7m x 7.3m x 4.3m D
Reaeration Zone: 22.8m x 7.3m x 4.3m D

Air Supply
Type: Three identical centrifugal air compressors
Power: 111.9 kW, 1132.5 l/s

Final Clarifiers
Size: Two, 19.8m diameter with maximum sludge recirculation capacity 10.23 $10^3 m^3$ per tank. Scum baffle and removable rotating skimming device.
Pump Type: Three identical horizontal centrifugal, variable speed drive activated sludge return pumps at 79.49 l/s @ 8.8m TDH. One scum pump at 3.79 $10^3 m^3$.

CHEMICAL TREATMENT

Phosphorus Removal
Type: Chemical storage tank with two chemical metering pumps
Size: 18.18 m^3

Chlorination
Type: Two 226.8 kg/d chlorinators Chlorine contact chamber with two compartments.
Volume: 89.21 m^3
Size: 7.6m x 4.3m x 2.7m D

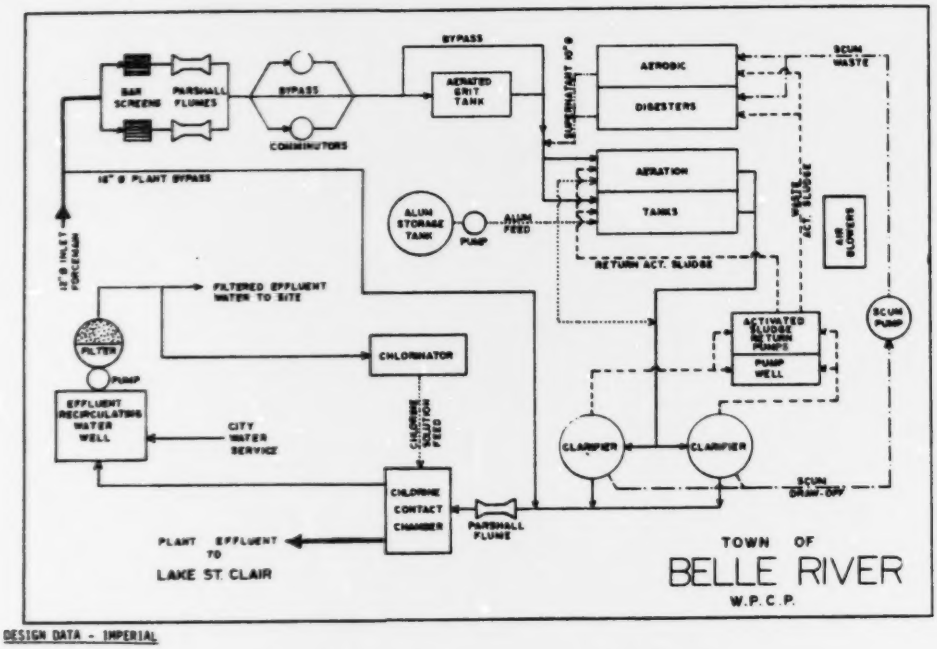
SLUDGE TREATMENT

Aerobic Digestors
Type: Two tanks. One equipped with air diffusion equipment allowing 557.9 l/s and decanting device.
Size: 29.9m x 6.1m x 4.3m D
Volume: 777.1 m^3

OUTLET WORKS

By-pass
From start of influent works to a point just ahead of effluent parshall flume.

Outfall
- to Lake St. Clair



DESIGN DATA - IMPERIAL

PROJECT Town of Belle River

PROJECT NO. 1-0305-72

TREATMENT Extended Aeration

DESIGN FLOW 1.5 MIGD

BOD - Raw Sewage 300 mg/l

SS - Raw Sewage 300 mg/l

PUMPING STATION

Two, raw sewage pumps (one standby) @430 IGPM each @ 32' TDH. Two vertical centrifugal pumps @ 1300 U.S. GPM each @ 68' TDH.

PRIMARY TREATMENT

Inlet Works

(5.45 MIGD) bar screens, 12" parshall flume, comminutor and by-pass.

Grit Removal

(5.45 MIGD) 1475 Cu. Ft. aerated grit tank (10'x10'x14.75' WD) equipped with air diffusion Equipment 50-100 SCFM.

SECONDARY TREATMENT

Aeration Tanks

(8.45 MIGD) Two 32,450 Cu. Ft. (0.405 MIG total) tanks.
Contact Zone - 7390 Cu. Ft.
Reaeration Zone - 25060 Cu. Ft.
Aeration tanks are equipped with air diffusion equipment allowing 1325 SCFM per tank.
Contact Zone (22'x24'x14' D)
Reaeration Zone (74.66x24x14' D)

Air Supply

Three, identical, centrifugal air compressors 150 HP, 2710 CFM.

Final Clarifiers

Two, 65' diameter equipped with maximum sludge recirculation capacity 2.25 MIGD per tank. Scum baffle and removable rotating skimming device. Three, identical, horizontal, centrifugal, variable speed drive activated sludge return pumps @ 1050 IGPM @ 29' TDH. One scum pump @ 50 IGPM.

CHEMICAL TREATMENT

Phosphorous Removal

4000 IG chemical storage tank with two chemical metering pumps.

Chlorination

Two, 500 lb/day chlorinators. Chlorine contact chamber with two compartments, 3150 Cu. Ft. @ (25'x14'x9' D).

SLUDGE TREATMENT

Aerobic Digesters

Two tanks (98'x20'x14'D) 27,440 Cu. Ft. each. One equipped with air diffusion equipment allowing 1335 SCFM, and decanting device.

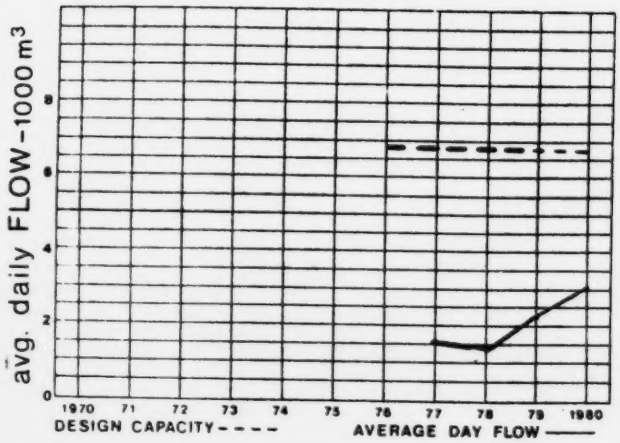
OUTLET WORKS

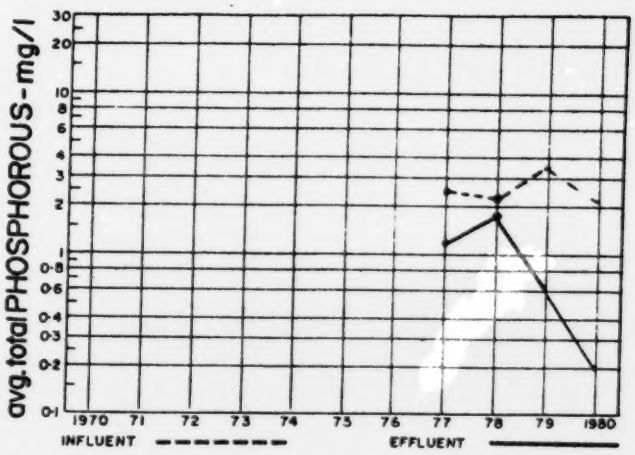
Bypass

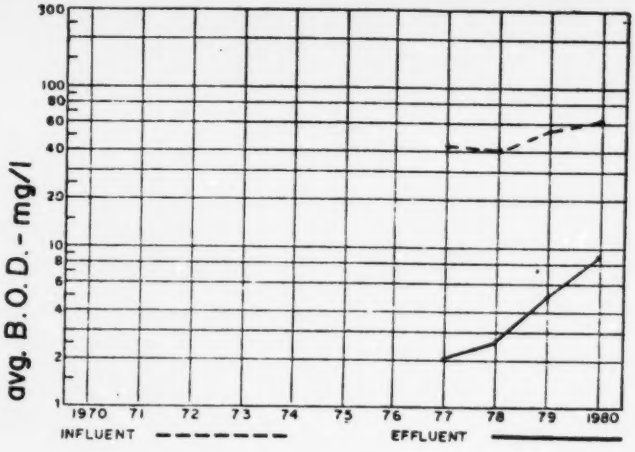
From start of influent works to a point just ahead of the effluent parshall flume.

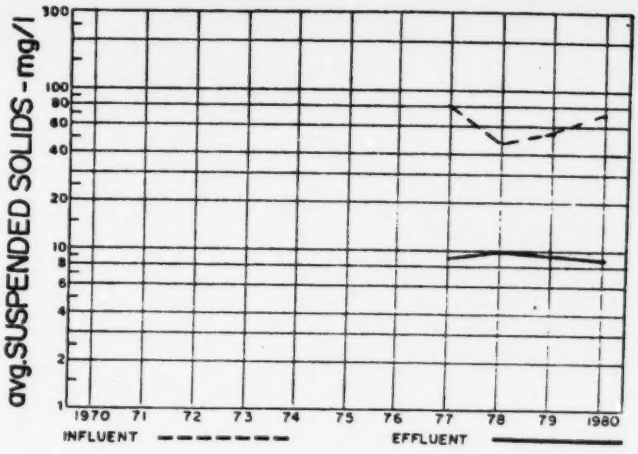
Outfall

To Lake St. Clair.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002078 BELLE RIVER MPCP

MUNICIPALITY : MAIDSTONE (BELLE RIVER)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 11,500
POPULATION SERVED : 3,000
PERCENT SERVED : 26.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 6.819 1000 M3 DESIGN BOD5 : 300.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	85.430	2.755	3.666	3.600	37.6	9.5	74	2.4	54.9	4.4	91	4.3	1.8	.2	85	.136
FEB	74.035	2.552	3.470		88.2	6.2	92	6.0	95.2	6.1	93	6.5	2.4	.2	90	.161
MAR	98.347	3.172	5.364		68.0	8.2	87	5.8	98.0	10.8	88	8.5	2.8	.2	92	.260
APR	110.575	3.686	4.259		56.7	10.0	82	5.1	63.0	11.4	81	5.6	1.9	.2	88	.192
MAY	102.840	3.320	4.464		56.5	10.0	82	4.7	60.8	8.6	85	5.3	2.2	.1	93	.211
JUN	100.452	3.348	4.424		50.0	10.0	80	4.0	54.6	7.6	86	4.7	1.9	.1	92	.176
JUL	89.440	2.885	4.598	3.000	67.8	8.1	88	5.3	87.4	8.2	90	7.0	2.3	.2	89	.183
AUG	107.492	3.467	5.440	3.000	53.2	8.9	83	4.7	69.0	7.9	88	6.5	1.6	.3	81	.144
SEP	106.270	3.542	5.460	6.500	70.9	10.0	85	6.4	73.9	9.8	86	6.8	2.0	.1	94	.205
OCT	90.209	2.909	3.394		60.9	8.1	86	4.7	56.3	12.3	78	3.9	2.1	.2	90	.172
NOV	83.137	2.771	3.104		74.0	10.0	86	5.3	72.0	11.5	83	5.0	2.1	.2	90	.157
DEC	99.391	3.206	3.883		60.0	9.1	84	5.0	65.6	9.8	85	5.5	3.5	.1	94	.330
TOTAL	1147.618							60.0				70.2				2.327
AVERAGE		3.134			61.9	9.0	85		70.8	9.0	87		2.2	.2	90	
MAXIMUM			5.460	6.500												
NO. OF SAMPLES					58	51			165	165			92	101		

DESIGN DATA - METRIC

MILDMAY

PROJECT: Mildmay

PROJECT NO.: 1-0119-67

TREATMENT: Extended Aeration

DESIGN FLOW: $0.96 \times 10^3 m^3$

DESIGN BOD:

SS:

SEWAGE PUMPING STATION
Type: Two centrifugal vertical dry pit raw sewage pumps
Size: 45.42 l/s @ 32.3m TDH
Power: 22.38 kW 3 speed (11.4-22.7-45.4 l/s) motor one kW standby diesel generator.

INLET WORKS
Type: One flowminutor with emergency bypass equipped with manually cleaned coarse bar screen.
Type: Twin grit channels
Size: 7.6m (L) x 0.5m (W)

AERATION TANK
Size: One 963 m^3 aeration tank in two compartments (242 m^2 x 4m swd)
Detention Time: 24 hrs. at DWF.
Maximum returnsludge 200% @ DWF

Final Clarifier
Size: One 13.49 diameter 3m swd circular clarifier. Effective surface area 122 m^2
Peak Rate: 32.3 m^3/m^2. min @ 3.932 $10^3 m^3/d$ Scum baffle, mechanical skimmer and air lift.

CHLORINE CONTACT CHAMBER
Size: 8.4m x 3.4m swd
Detention time: 42 minutes
Type: One submersible chlorination water pump Rate: 0.631 l/s @ 29m TDH
Type: One chlorine residual analyser pump Rate: 0.631 l/s at 15m TDH
Type: One vertical turbine effluent waterpump
Rate: 2.209 l/s @ 37m TDH

SLUDGE HOLDING TANKS
Size: One 24m2 x 4m swd
Detetnion time: 54 days
Air diffusers decanting device
One submersible sludge unloading pump rated at 29.5 l/s @ 12.2m TDH

BY-PASS
Size: 9m @ 254mm dia. sewer from exit of grit channels to outfall chamber.

OUTFALL SEWER
Size: 91.4m of 279.4mm O.D. polyethylene sewer discharging to Otter Creek.

BLOWER EQUIPMENT
Type: Three positive displacement blowers
Rate: 125.4 l/s @ 55.158 kPa
Speed: 840 r/min
Power: 15 kW, 1750 r/min motors

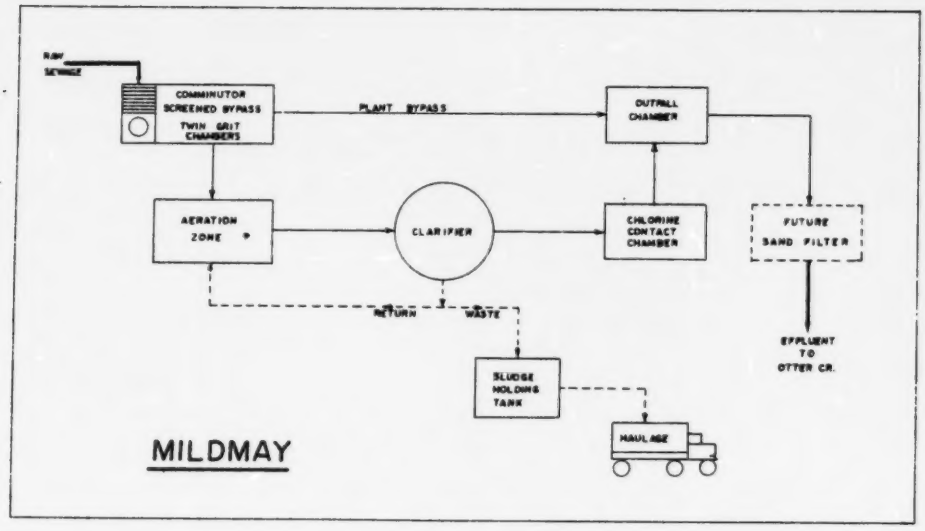
CHEMICAL FEED SYSTEM (Phosphorus Removal)
Size: One 27.24 m^3 chemical storage tank for Alum, $FeCl_3$ or $FeSO_4$
Pump Type: Two positive displacement chemical feed pumps
Rate: 0.019 l/s @ 827 kPa feeding to entry or exit of the aeration tank

CHLORINATION
Type: One v-notch gas chlorinator
Size: 45.36 kg/day
Type: One chlorine residual analyser

WELL
Size: One dia. well approx. 45.72m deep with a submersible pump
Rate: 1.893 l/s

STAND BY POWER
Type: One 75 kW, 93.75 kva diesel generator set with 0.908 m^3 fuel tank

MISCELLANEOUS
Type: One portable submersible sewage pump
Rate: 9.465 l/s @ 12.2 m TDH



DESIGN DATA - IMPERIAL

PROJECT : Mildmay
PROJECT NO. : 1-011-67
TREATMENT : Extended Aeration
DESIGN FLOW : 0.2125 MIGD

SEWAGE PUMPING STATION
Two centrifugal vertical dry pit raw sewage pumps each rated at 600 IGPM at 106 FT T.D.H. driven by a 30hp 3 speed (150-300-600 IGPM) motor One 60 KW standby diesel generator.

INLET WORKS
One flowminutor with emergency bypass equipped with manually cleaned coarse bar screen.
Twin grit channels, each 25'Lx1.75'W.

AERATION TANK
One 34,000 FT^3 aeration tank in two compartments (2600 sq. ft.x 13ft.SWD) 24 hrs detention at DWF.
Max. return sludge 200% at DWF

FINAL CLARIFIER
One 44.25' diameter 10'SWD circular clarifier.
Effective surface area 1310 sq.ft. equivalent to a peak loading rate rate of 660 IGPM/sq.ft., at 0.865 MIGD
Scum baffle, mechanical skimmer and air lift.

CHLORINE CONTACT CHAMBER
90 sq.ft.x11' SWD 42 minutes detention
One submersible chlorination water pump rated at 10 USGPM @ 95 T.D.H.
One chlorine residual analyser pump rated a 10USGPM @ 50 T.D.H.
One vertical turbine effluent water pump rated at 35 USGPM @ 122 T.D.H.

SLUDGE HOLDING TANK
One, 260 sq.ft.x13.0'SWD.
54 days detention.
Air diffusers decanting device
One submersible sludge unloading pump rated at 150 USGPM @ 40 T.D.H.

BYPASS
30' of 10" diam. sewer from exit of grit channels to outfall chamber

OUTFALL SEWER
300' of 11" O.D. polyethylene sewer discharging to Otter Creek.

BLOWER EQUIPMENT
Three positive displacement blowers each rated at 300 SCFM @ 8 PSIG, 840 RPM driven by 20hp,1750 RPM motors

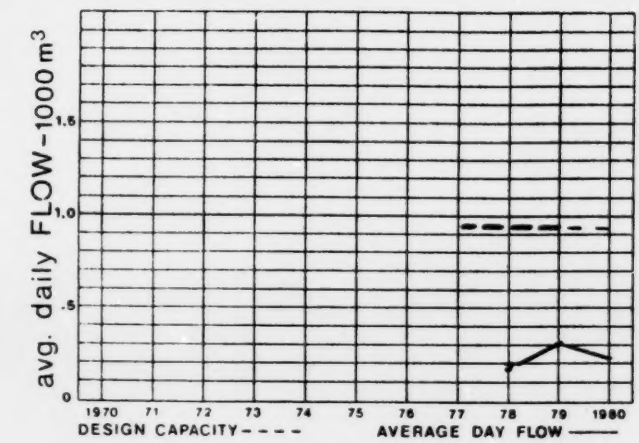
CHEMICAL FEED SYSTEM (Phosphrous removal)
One 6000 IG chemical storage tank for Alum, $FeCl_2$ or $FeSO_4$
Two positive displacement chemical feed pumps ea rated at 15 IGPM @ 120 PSI feeding to entry or exit of the aeration tank

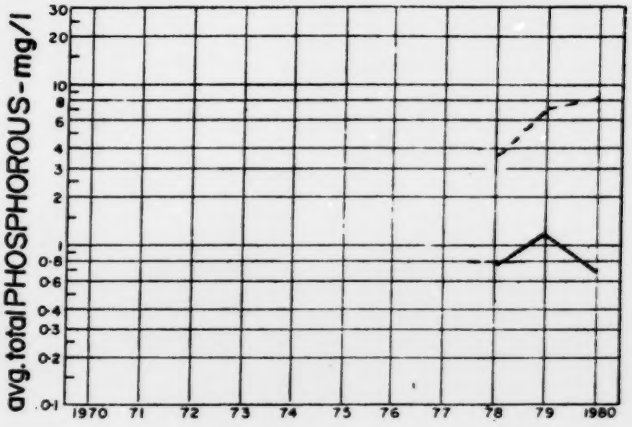
CHLORINATION
One v-notch gas chlorinator with a capacity of 100lb/day.
One chlorine residual analyser.

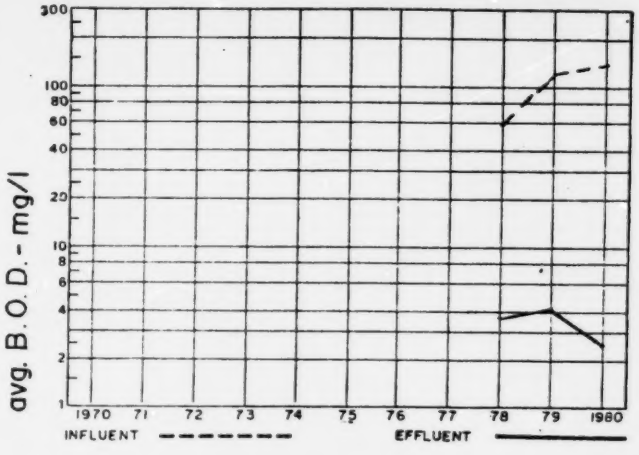
WELL
One 6" diam. well approx 150' deep with a 25 IGPM deep well submersible pump

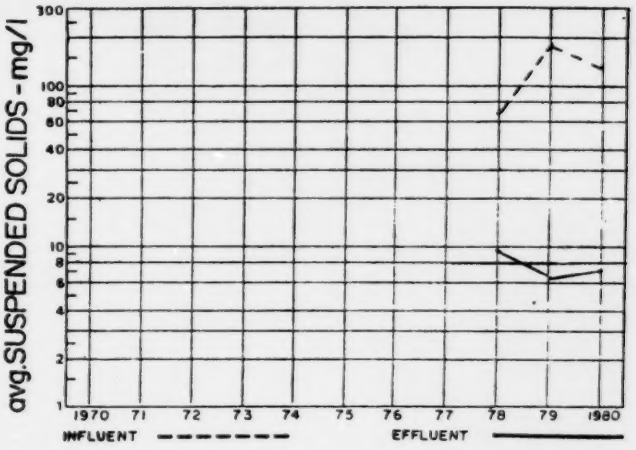
STANDBY POWER
One 75 KW.93.75 KVA diesel generator set with 200 IG fuel tank.

MISCELLANEOUS
One portable submersible sewage pump rated at 150 USGPM @ 40' T.D.H.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002194 MILDMAY MPCP

MUNICIPALITY : MILDMAY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 960
POPULATION SERVED : 930
PERCENT SERVED : 96.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.968 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	7.623	.246	.506		205.2	2.9	98	1.5	192.5	4.6	97	1.4	10.3	.6	94	.074
FEB	8.527	.294	.448		195.0	3.6	98	1.6	165.0	6.5	96	1.3	11.7	.5	95	.095
MAR	13.061	.421	.943		133.0	5.7	95	1.6	151.5	5.0	96	1.9	7.9	.5	93	.097
APR	11.522	.384	.686		122.0	4.6	96	1.3	114.0	16.5	85	1.1	8.2	.9	88	.084
MAY	5.185	.167	.225		89.0	2.1	97	.4	113.0	10.0	91	.5	8.1	.9	88	.037
JUN	4.156	.139	.239		118.0	1.6	98	.4	128.0	1.5	98	.5	7.6	.7	90	.029
JUL	4.774	.154	.274		166.5	2.7	98	.7	277.8	3.5	98	1.3	9.1	.6	92	.040
AUG	4.562	.147	.227		93.0	2.2	97	.4	77.9	4.2	94	.3	6.1	.8	86	.024
SEP	5.251	.175	.275		114.0	2.9	97	.5	101.1	6.2	93	.4	11.1	1.3	88	.051
OCT	6.475	.209	.296		145.0	2.4	98	.9	121.7	11.7	90	.7	7.3	.8	88	.042
NOV	8.074	.269	.349		77.5	2.9	96	.6	49.9	7.7	84	.3	4.8	.6	86	.033
DEC	10.174	.328	.715		132.5	5.0	96	1.2	140.9	8.7	93	1.3	5.3	.6	87	.047
TOTAL	89.384							11.7				11.4				.653
AVERAGE		.244			132.5	3.2	97		136.1	7.1	94		8.1	.7	90	
MAXIMUM			.943													
NO. OF SAMPLES					25	25			25	25			25	25		

DESIGN DATA - METRIC

MOORE (CORUNNA)

PROJECT Moore Twp. (Corunna) WPCP

PROJECT NO. 2-0088-81

TREATMENT Extended Aeration

DESIGN FLOW 4.36 $10^3 m^3/d$

DESIGN POPULATION 4,000

BOD - Raw Sewage 150 mg/l
- Removal 90-95%

SS - Raw Sewage 150 mg/l
- Removal 90-95%

PRETREATMENT

Comminution

Type: Worthington comminutor
Size: One Model 15-C-4

Grit Removal

Type: C.P. Aer-Degritter with air lift
Size: 17.18 m^3
Retention: 17 min

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air, Single pass
Size: Two 25.6m x 5.18m x 4.34m (avg.)
Volume: 1154.68m^3
Retention: 24.0 hours

Air Supply

Type: Sutorbilt
Size: Two 417.9 l/s

Diffusers

Type: C.P. Spargers
Spacing: 22 per tank @ 508mm c-c

Secondary Sedimentation

Type: Dorr
Size: Two 6.71m x 3.71m x 3.81m (342.31m^3)
Retention: 5.7 hours
Loading: Surface, 16.13 $m^3/m^2 \cdot d$
Weir, 35.0 $m^3/m \cdot d$

CHLORINATION

Type: W & T, Manual
Size: One 45.36 kg/d

Chlorine Contact Chamber

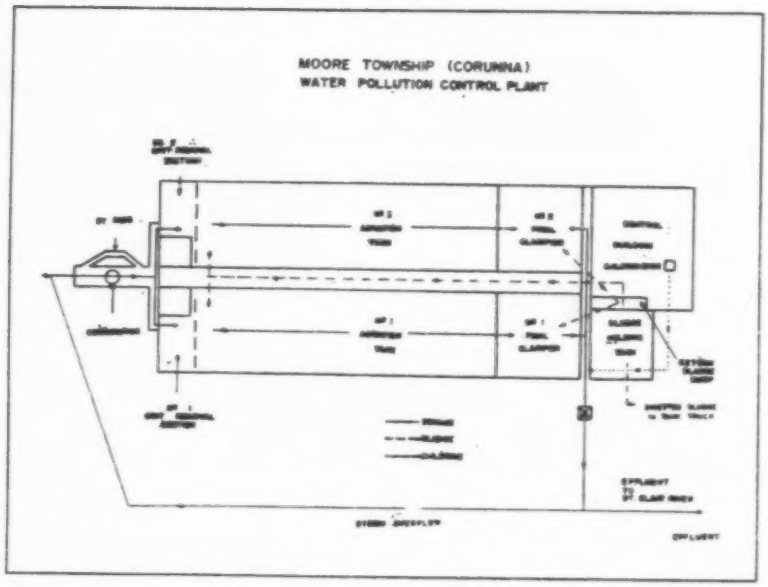
- in outfall

OUTFALL

59.74m of 1219m dia corrugated pipe to St. Clair River

SLUDGE HANDLING

Type: Sludge holding tank (decanted)
Size: One 5.18m x 5.18m x 4.57m (104.56m^3 at 3.96m depth)



DESIGN DATA - IMPERIAL

PROJECT Moore Twp. (Corunna) WPCP

PROJECT NO. 2-0088-81

TREATMENT Extended Aeration

DESIGN FLOW 0.96 mgd

DESIGN POPULATION 4,000

BOD - Raw Sewage 150 mg/l
- Removal 90-95%

SS - Raw Sewage 150 mg/l
- Removal 90-95%

PRETREATMENT

Comminution

Type: Worthington comminutor
Size: One Model 15-C-4

Grit Removal

Type: C.P. Aer-Degritter with air lift
Size: 3780 gal
Retention: 17 min

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air, Single pass
Size: Two 84' x 17' x 14.25' (avg)
(40,000 cu ft or 254,000 gal)
Retention: 24.0 hours

Air Supply

Type: Sutorbilt
Size: Two 1000 cfm

Diffusers

Type: C.P. Spargers
Spacing: 22 per tank @ 20" c-c

Secondary Sedimentation

Type: Dorr
Size: Two 22' x 22' x 12½' swd
(75,300 gal)
Retention: 5.7 hours
Loading: Surface, 330 gal/ft^2/day
Weir, 2,380 gal/ft/day

CHLORINATION

Type: W & T, Manual
Size: One 100 lb/day

Chlorine Contact Chamber

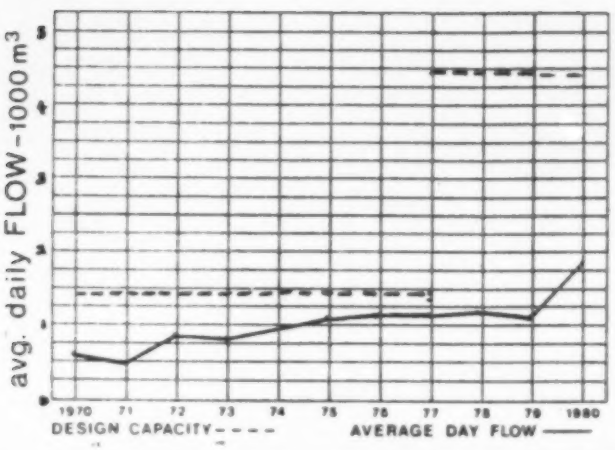
- in outfall

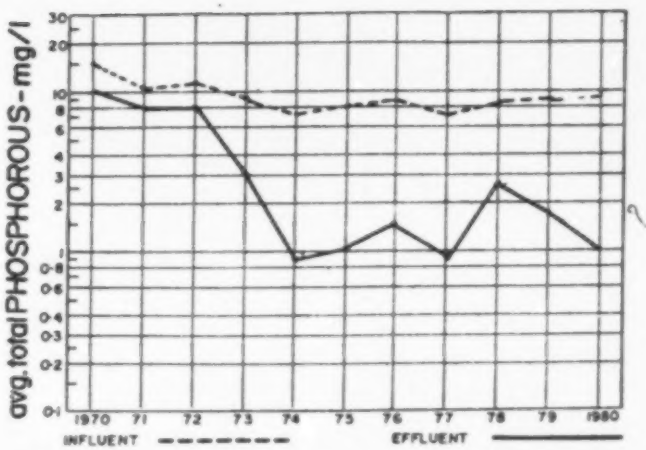
OUTFALL

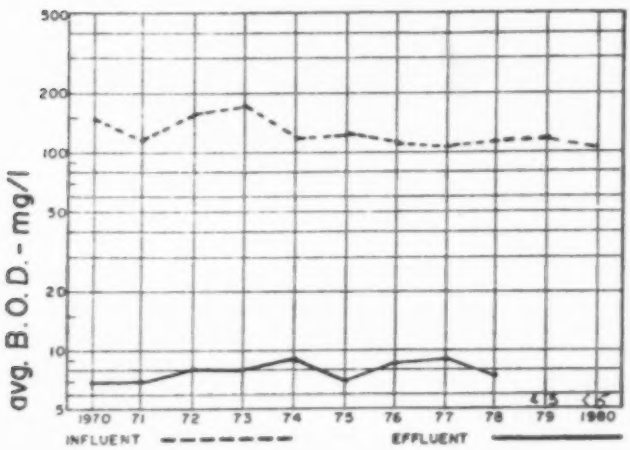
198' of 48" dia corrugated pipe to St. Clair River

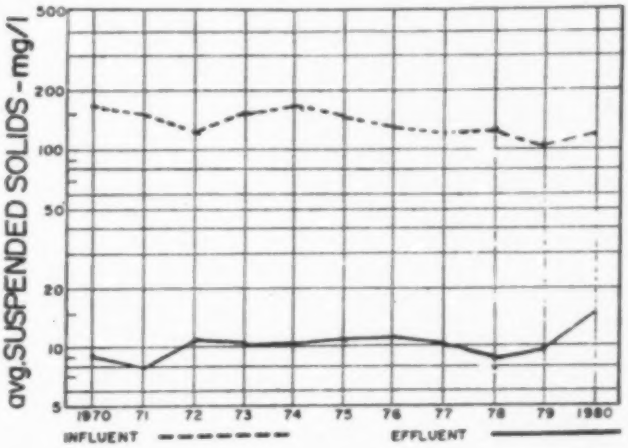
SLUDGE HANDLING

Type: Sludge holding tank (decanted)
Size: One 17' x 17' x 13' (33,000 gal @ 12.9' depth)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000481 CORUNNA P. V. MPCP

MUNICIPALITY : MOORE (CORUNNA)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 3,200
POPULATION SERVED : 3,000
PERCENT SERVED : 93.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

* NO SAMPLES COLLECTED

DESIGN CAPACITY : 4.364 1000 M3 DESIGN BOD5 : 150.0 MG/L DESIGN SUSP.SOLIDS : 150.0 MG/L

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	BIOCHEMICAL OXYGEN DEMAND INFLUENT MG/L	BOD EFFLUENT MG/L	BOD REDUCTION %	BOD REDUCTION 1000 KG	SUSPENDED SOLIDS INFLUENT MG/L	SS EFFLUENT MG/L	SS REDUCTION %	SS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TP EFFLUENT MG/L	TP REDUCTION %	TP REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	44.417	1.432	2.414	2.590	132.0	3.2	97	5.7	614.0	52.4	91	24.9	8.0	1.5	80	.287
FEB	42.503	1.465	1.725	2.045	*	*			*	*			*	*		
MAR	58.826	1.897	3.245	4.091	130.0	6.8	94	7.2	134.0	12.5	90	7.1	6.7	.9	85	.339
APR	65.492	2.183	3.048	4.091	92.0	8.8	90	5.4	60.0	12.0	80	3.1	5.4	1.3	75	.266
MAY	61.551	1.985	2.966	4.091	74.0	3.2	95	4.3	107.0	12.5	88	5.8	8.4	1.5	81	.422
JUN	57.364	1.912	2.509		38.0	2.6	93	2.0	82.0	24.5	70	3.2	4.5	1.0	77	.200
JUL	56.072	1.808	2.772	3.273	96.0	.8	99	5.3	73.0	5.2	92	3.8	30.5	1.2	96	1.643
AUG	57.768	1.863	2.156	3.409	64.0	2.2	96	3.5	62.0	6.2	90	3.2	6.7	.5	91	.355
SEP	58.298	1.943	2.582	3.750	*	1.4			*	10.3			NOT ANALYSED			
OCT	59.299	1.913	2.341	3.956	120.0	4.2	96	6.8	52.9	9.0	82	2.6	7.5	.7	89	.404
NOV	53.185	1.733	2.177	3.068	116.0	2.6	97	6.0	105.6	8.4	92	5.1	8.3	.5	93	.412
DEC	62.939	2.030	2.881	2.727	170.0	5.2	96	10.3	95.1	18.6	80	4.8	7.7	1.0	86	.417
TOTAL	677.714							56.9				63.9				4.741
AVERAGE		1.847			103.2	3.7	96		138.5	15.6	88		9.3	1.0	88	
MAXIMUM			3.245	4.091												
NO. OF SAMPLES					10	11			10	11			10	10		

DESIGN DATA - METRIC

MOORE (COURTRIGHT)

PROJECT: Village of Courtright WPCP

PROJECT NO: 1-0157-62

TREATMENT: Extended Aeration

DESIGN FLOW: 0.546 $10^3m^3/d$

PRIMARY TREATMENT

Screening

38.1 mm x 38.1 mm bars at 50.8 mm c/c

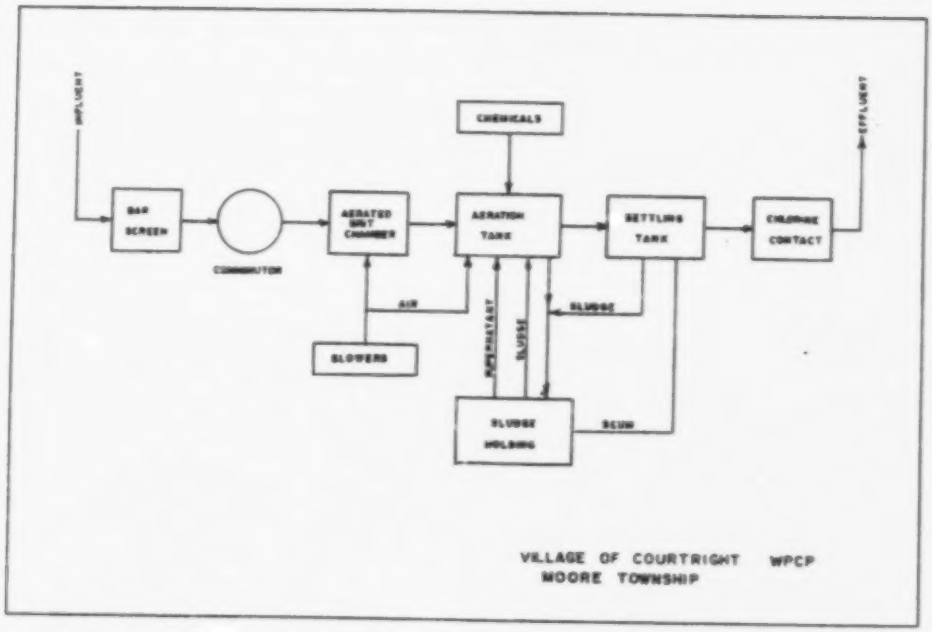
SECONDARY TREATMENT

Aeration Tanks

Volume: 0.55 10^3m^3

PUMPING STATION

2 submersible pumps plus one standby.
Any two rated at 1750.21 10^3m^3.



DESIGN DATA - IMPERIAL

PROJECT Village of Courtright WPCP

PROJECT NO. 1-0157-62

TREATMENT Extended Aeration

DESIGN FLOW .120 MIGD

PRIMARY TREATMENT

Screening

1½" x ½" bars @ 2" c/c

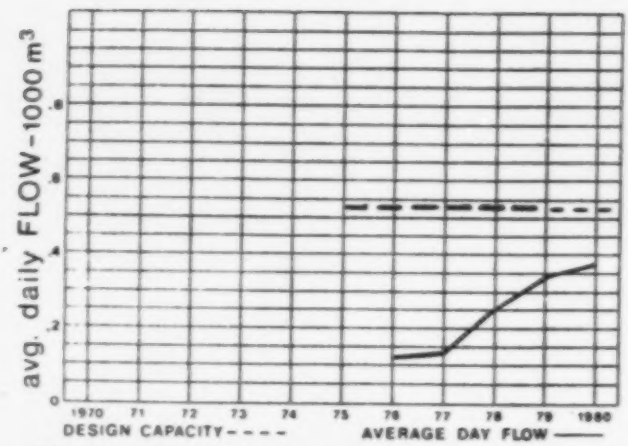
SECONDARY TREATMENT

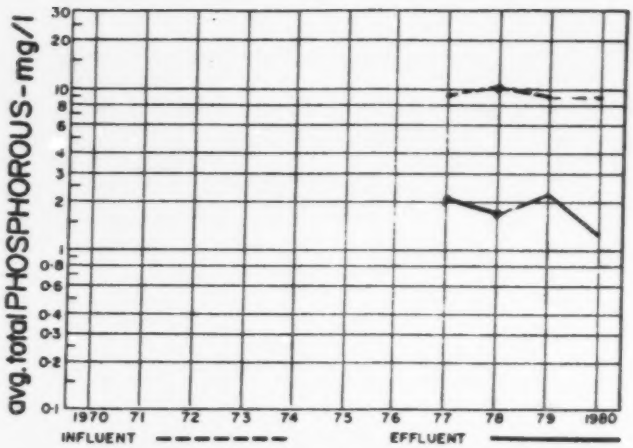
Aeration Tanks

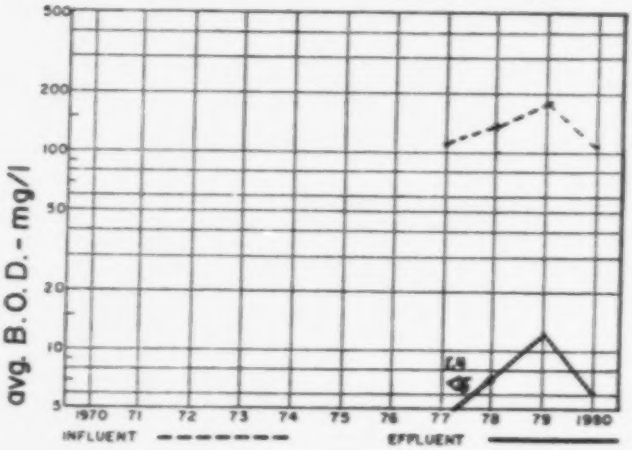
Volume: 0.12 mg

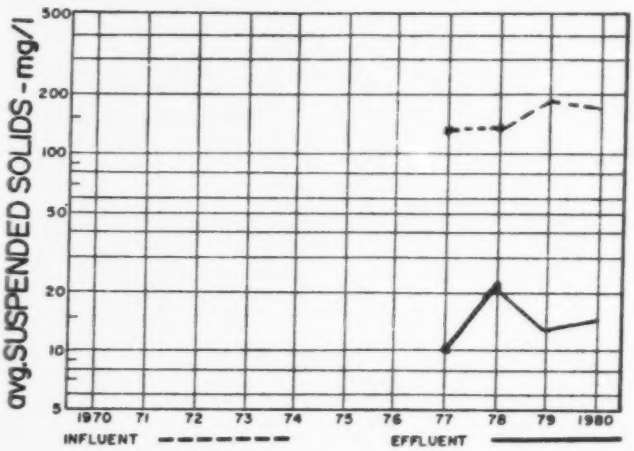
PUMPING STATION

2 submersible pumps plus one standby.
Any two rated at 385 IGPM.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001818 COURTRIGHT W P C P

MUNICIPALITY : MOORE (COURTRIGHT)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 9,591
POPULATION SERVED : 600
PERCENT SERVED : 6.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.545 1000 M3 DESIGN BOD5 : .0 MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	10.232	.330	.536	.945	136.0	6.0	95	1.3	644.0	58.4	90	5.9	8.8	1.3	85	.077
FEB	8.732	.301	.373	.658	112.0	4.0	96	.9	160.0	8.5	94	1.3	7.1	1.8	74	.046
MAR	12.518	.403	.796	1.400	150.0	9.2	93	1.7	102.0	15.0	85	1.0	10.4	2.6	75	.098
APR	13.330	.430	.933	1.643	118.0	6.6	94	1.4	99.0	4.0	95	1.2	8.8	.3	95	.112
MAY	12.114	.390	.692	1.999	185.0	9.2	95	2.1	266.0	10.0	96	3.1	13.0	1.4	89	.140
JUN	10.965	.365	.570	1.004	84.0	6.0	92	.8	125.0	22.0	82	1.1	13.6	1.1	91	.137
JUL	10.324	.333	.458	.867	*	*			*	*			*	*		
AUG	10.813	.348	.452	.797	70.0	1.6	97	.7	103.4	3.1	97	1.0	6.7	1.9	70	.051
SEP	14.145	.471	.510	.898	96.0	5.5	94	1.2	135.0	6.0	95	1.8	8.6	.3	95	.117
OCT	10.860	.350	.420		132.0	6.2	95	1.3	56.8	9.0	84	.5	8.5	.9	88	.082
NOV	9.732	.324	.430		124.0	3.8	96	1.1	136.8	15.7	88	1.1	9.9	1.1	88	.086
DEC	12.199	.393	.701		94.0	13.2	85	.9	67.0	26.9	59	.4	8.3	1.7	78	.080
TOTAL	135.964							14.0				18.9				1.026
AVERAGE		.370			118.2	6.4	94		172.2	16.2	90		9.4	1.3	85	
MAXIMUM			.933	1.999												
NO. OF SAMPLES					11	11			11	11			11	11		

DESIGN DATA - METRIC

WESTMINSTER

PROJECT Westminster Twp. WPCP

PROJECT NO. 2-0033-59

TREATMENT Extended Aeration

DESIGN FLOW 1.137 $10^3 m^3/d$

DESIGN POPULATION 5,000

RAW SEWAGE PUMPS

Make: Chicago Pump
#1 - 7.57 l/s at 7.0 TDH
Type: 1.2m x 1.2m, 1.5 kW electric
#2 - 7.57 l/s at 7.0m TDH
Type: 1.2m x 1.2m, 1.5 kW
with standby Wisconsin
THD size 1.0m x 1.0m gasoline engine
#3 - 18.9 l/s x 6.1m TDH
Type: LMC4, 2.23 kPa

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air; single-pass
Size: Two 16.5m x 8.2m x 4.3m (1145.6m^2)
Retention: 24.2 hr.

Diffusers

- Discfusers on swing arm

Air Supply

Type: Sutorbilt
Size: Three 140.8 l/s at 48.26 kPa

Secondary Sedimentation

Type: Link-Belt
Size: Two 16.5m x 2.4m x 2.8m
Volume: 228.21m^3
Retention: 4.80 hr.
Loading: Surface, 20.36 $m^3/m^2 \cdot d$
Weir, 29.13 $m^3/m \cdot d$

CHLORINATION

Type: W & T
Size: One 45.36 kg/d

Chlorine Contact Chamber

Size: One 3.05m x 2.1m x 2.7m
Volume: 17.87 m^3
Retention: 22.7 min.

OUTFALL

- to Dingman Creek

TERTIARY TREATMENT

Effluent Sand Filters

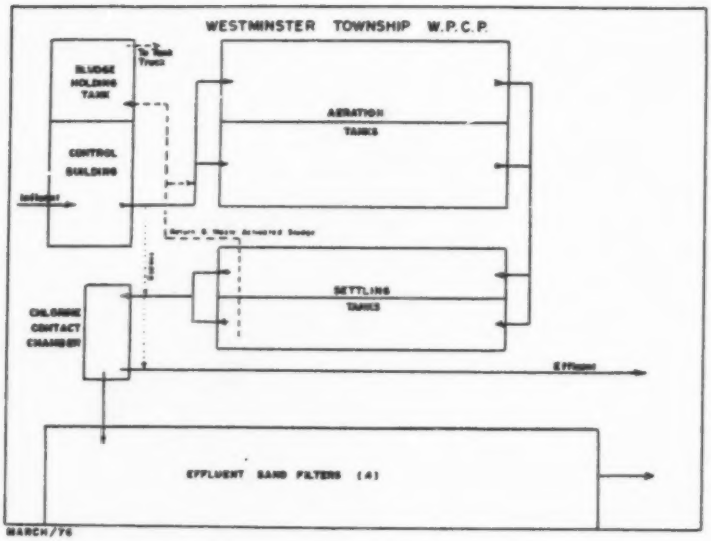
Size: Four units (2499 m^2 or 0.25 ha)

Depth: 762mm of sand (min)
Capacity: 0.745 $10^3 m^3$/ha/day

SLUDGE HANDLING

Sludge Holding Tank

Size: 126 m^3



DESIGN DATA - IMPERIAL

PROJECT Westminster Twp. WPCP

PROJECT NO. 2-0033-59

TREATMENT Extended Aeration

DESIGN FLOW 0.25 mgd

DESIGN POPULATION 5,000

RAW SEWAGE PUMPS

Make: Chicago Pump
#1 - 100 gpm @ 23' tdh
Type: 4x4, 2hp electric
#2 - 100 gpm @ 23' tdh
Type: 4x4, 2hp electric
with standby Wisconsin
THD size 3½ x 3½ gasoline engine
#3 - 250 gpm x 20' tdh
Type: LMC4, 3 hp electric

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air; single-pass
Size: Two 54' x 27' x 14' (252,000 gal)
Retention: 24.2 hr

Diffusers

- Discfusers on swing arm

Air Supply

Type: Sutorbilt
Size: Three 337 scfm @ 7 psi

Secondary Sedimentation

Type: Link-Belt
Size: Two 54' x 9' x 9.25' (60,300 gal)
Retention: 4.80 hr
Loading: Surface, 500 gal/ft^2/day
Weir, 1955 gal/ft/day

CHLORINATION

Type: W & T
Size: One 100 lb/day

Chlorine Contact Chamber

Size: One 10' x 7' x 9' (2930 gal)
Retention: 22.7 min

OUTFALL

- to Dingman Creek

TERTIARY TREATMENT

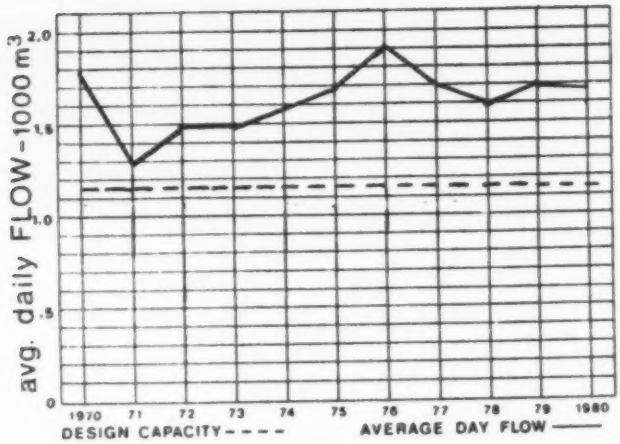
Effluent Sand Filters

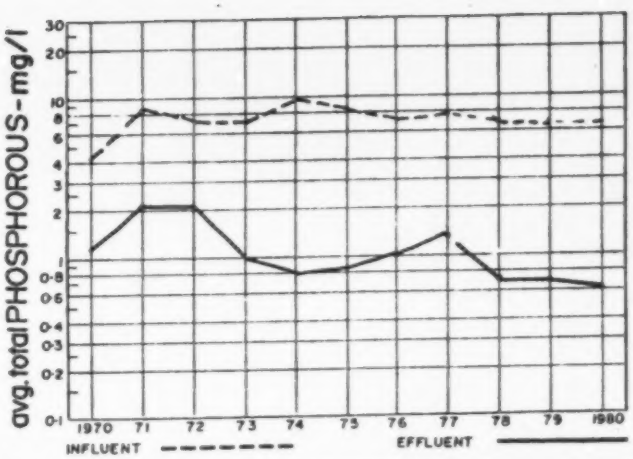
Size: Four units (26,900 sq ft or 0.62 acres)
Depth: 30" of sand (min)
Capacity: .605 mil gal/acre/day

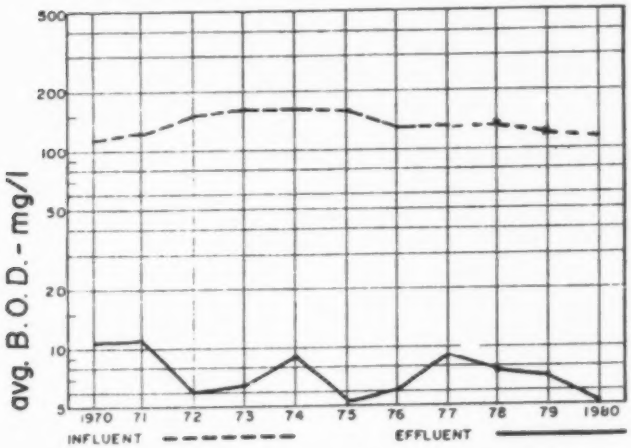
SLUDGE HANDLING

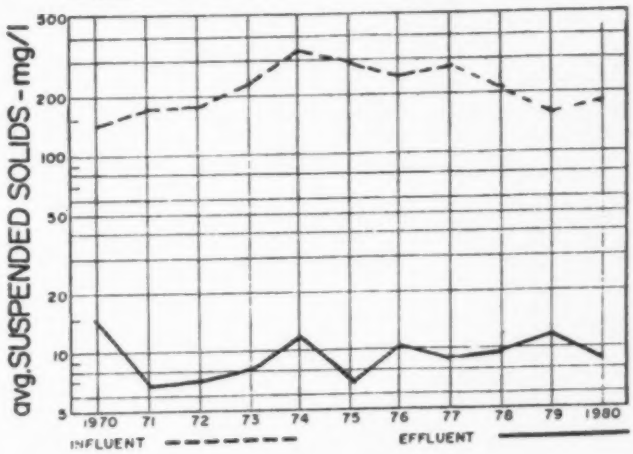
Sludge Holding Tank

Size: 4,460 cu ft or 27,880 gal









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000800 WESTMINSTER WPCP

MUNICIPALITY : WESTMINSTER TWP
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 6,267
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.136 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	54.891	1.771	2.891		150.0	13.4	91	7.4	222.0	12.0	94	11.5	5.6	.5	91	.280
FEB	41.688	1.438	1.887		222.0	8.4	96	8.9	248.0	13.0	94	9.7	6.4	.4	93	.251
MAR	53.360	1.721	2.818		142.5	7.8	94	7.1	310.0	14.5	95	15.7	7.3	.7	90	.352
APR	62.153	2.220	3.637		104.0	6.8	93	6.0	226.0	6.0	97	13.6	5.8	.3	94	.342
MAY	49.605	1.600	2.347		145.0	1.6	98	7.1	145.0	8.0	94	6.7	8.5	.7	91	.387
JUN	37.232	1.241	1.590		167.5	3.1	98	6.1	135.5	12.0	91	4.5	5.9	.7	88	.195
JUL	40.740	1.314	2.669		115.0	.8	99	4.6	153.0	2.5	98	6.1	7.0	.8	88	.253
AUG	49.073	1.583	2.055		104.0	1.4	98	5.0	156.1	4.7	96	7.4	7.0	.7	90	.309
SEP	60.847	2.028	2.418		132.0	3.6	97	7.8	103.5	12.4	88	5.5	7.2	.8	88	.389
OCT	55.124	1.778	2.441		99.0	2.8	97	5.3	124.7	1.4	98	6.7	5.8	.6	89	.287
NOV	47.116	1.571	2.350		100.0	1.6	98	4.6	181.3	5.6	96	8.2	6.7	.6	90	.286
DEC	62.856	2.028	2.673		105.0	12.8	87	5.7	178.1	15.5	91	10.2	5.6	.6	89	.314
TOTAL	614.685							76.1				106.5				3.645
AVERAGE		1.691			132.1	5.3	95		181.9	8.9	95		6.5	.6	90	
MAXIMUM			3.637													
NO. OF SAMPLES					15	15			15	15			15	15		

Ministry of the Environment
Ontario

West Central Region

②

REGIONAL OFFICE

HAMILTON
119 King St. W.
P.O. BOX 2112
811-521-7640

DISTRICT OFFICES

Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
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Ministry of the Environment
Ontario

West Central Region

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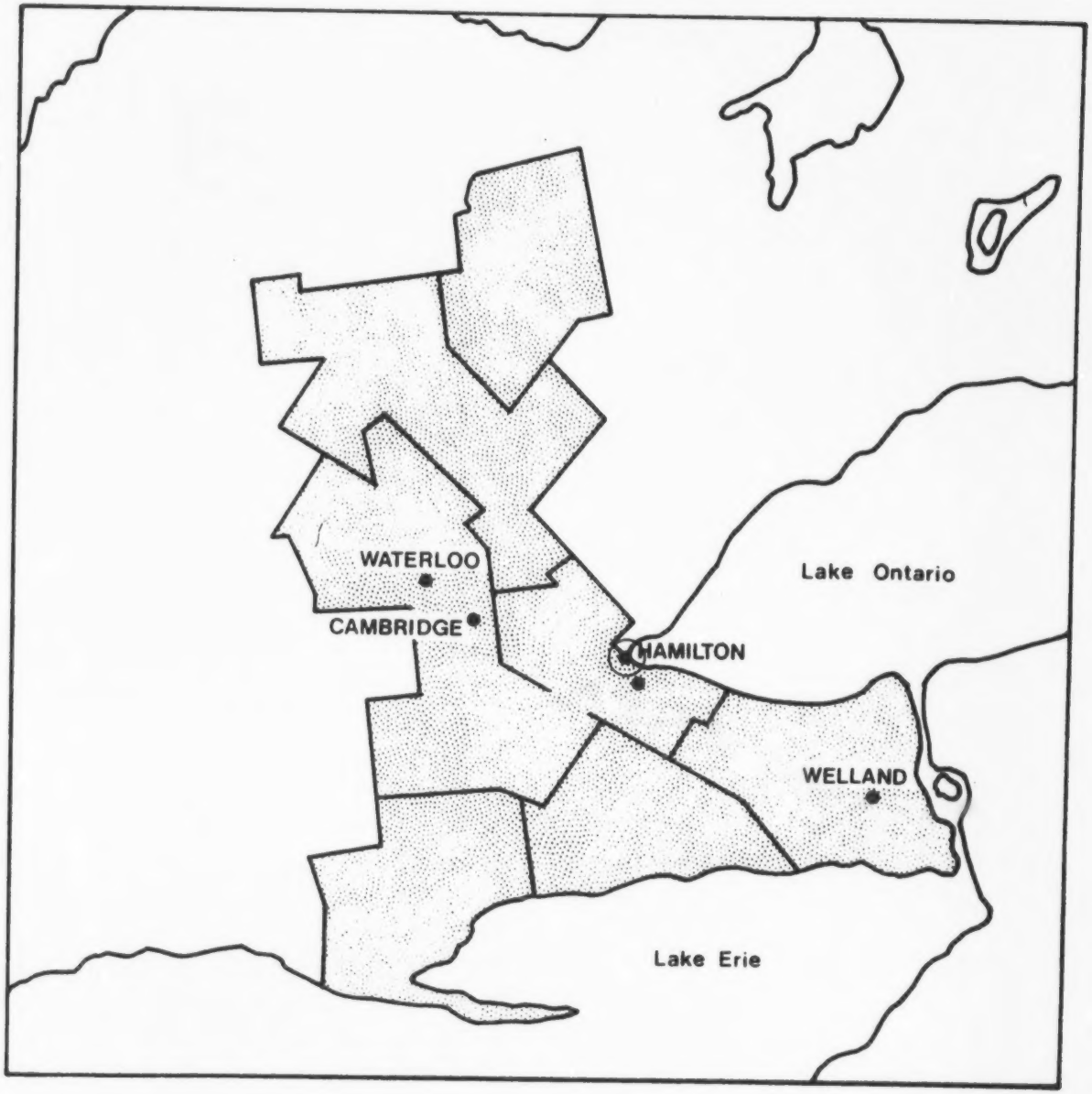


DESIGN DATA - METRIC

ELORA

PROJECT: Village of Elora WPCP

PROJECT NO.: 2-0125-62

TREATMENT: Extended Aeration

DESIGN FLOW: 0.377 $10^3 m^3/d$

DESIGN POPULATION 1,000

BOD - Raw Sewage 210 mg/l

SS - Raw Sewage 250 mg/l

PRETREATMENT

Screening (at pumping station)

- Two coarse bar screens

Pumps - Robert Morse

- Two 22.71 l/s (electric) @ 14.3m TDH

Grit Removal

Type: Grit channels
Size: Two 3.05m x 0.6m

SECONDARY TREATMENT

Aeration Tanks

Type: Single-pass
Size: Two 9.8m x 6.1m x 3.4m ($399.312 m^3$)
Retention: 25.4 hr.

Air Supply

Type: Sutorbilt: variable speed pulley
Size: Two 76.5 - 15.5 l/s

Diffusers

Type: Spargers
Size: 16 per tank @ 0.6m centres

Secondary Sedimentation

Type: Walker Process
Size: Two 7.9m x 1.8m x 2.4m deep ($34.10m^3$)
Retention: 4.3 hr.
Loading: Surface, 13.0 m^3/m^2-d
Weir, 22.35 m^3/m-d

CHLORINATION

Type: Wallace & Tiernan V-100

Chlorine Contact Chamber

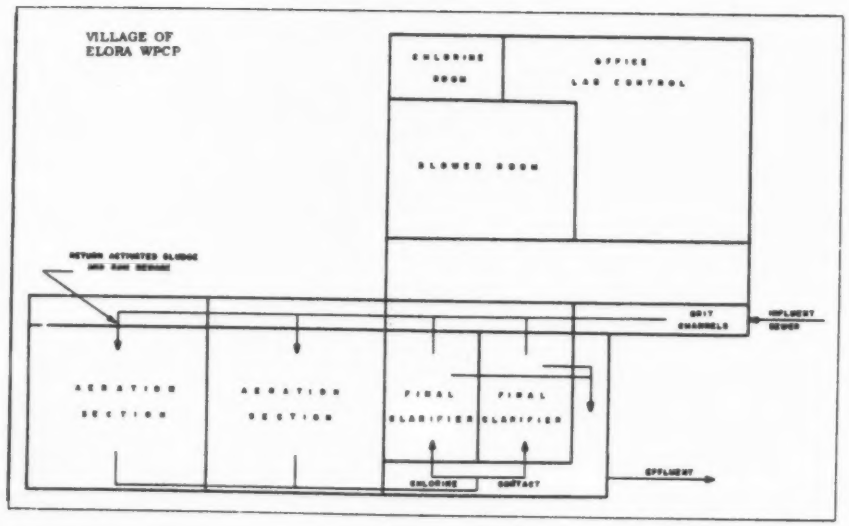
Size: 4.0m x 1.5m x 1.8m deep ($9.91m^3$)
Retention: 37.7 min.

OUTFALL

- dia pipe to Grand River

SLUDGE HANDLING

Type: Thickening tank
Size: 8.2m x 6.3m x 3.6m (avg) ($2057.40m^3$)



DESIGN DATA - IMPERIAL

PROJECT Village of Elora WPCP

PROJECT NO.	2-0125-62
TREATMENT	Extended Aeration
DESIGN FLOW	0.083 mgd
DESIGN POPULATION	1,000
BOD - Raw Sewage	210 mg/l
SS - Raw Sewage	250 mg/l

PRETREATMENT

Screening (at pumping station)

- Two coarse bar screens

Pumps - Robert Morse

- Two 300 gpm (electric) @ 47' tdh

Grit Removal

Type: Grit channels
Size: Two 10' x 2'

SECONDARY TREATMENT

Aeration Tanks

Type: Single-pass
Size: Two 32' x 20' x 11' (14,100 cu ft or 87,800 gal)
Retention: 25.4 hr

Air Supply

Type: Sutorbilt; variable speed pulley
Size: Two 183-370 cfm each

Diffusers

Type: Spargers
Size: 16 per tank @ 2' centres

Secondary Sedimentation

Type: Walker Process
Size: Two 26' x 8' x 7'9" deep (7,500 gal)
Retention: 4.3 hr
Loading: Surface, 286 gal/ft^2/day
Weir, 1,500 gal/ft/day

CHLORINATION

Type: Wallace & Tiernan V-100

Chlorine Contact Chamber

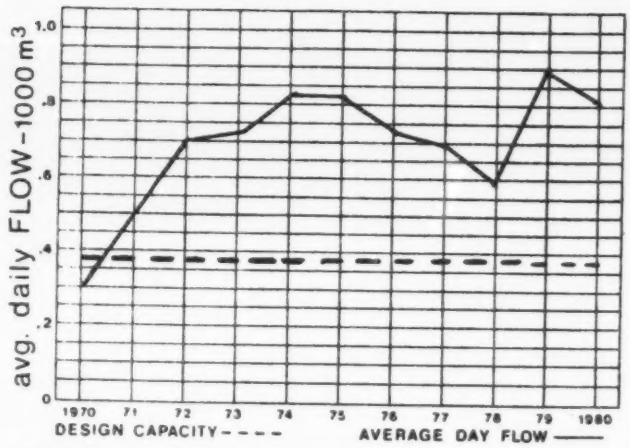
Size: 13' x 5' x 6' deep (2,180 gal)
Retention: 37.7 min

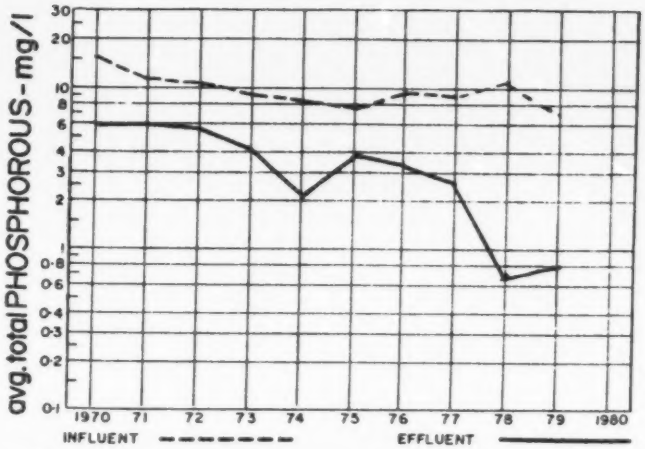
OUTFALL

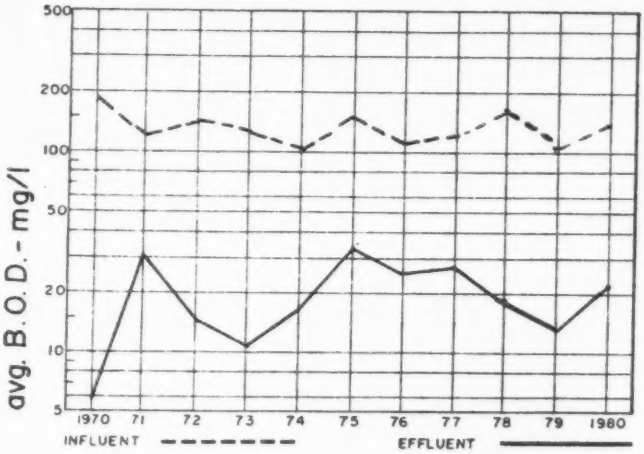
- 12" dia pipe to Grand River

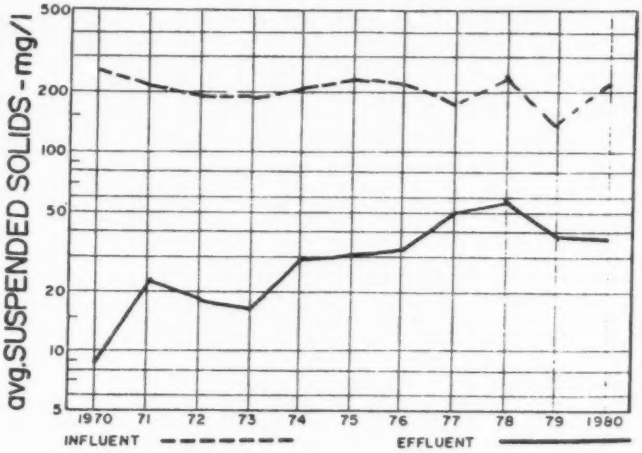
SLUDGE HANDLING

Type: Thickening tank
Size: 27' x 20' 8" x 11' 9" (avg) (6,730 cu ft or 42,000 gal)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000178 ELORA M P C P

MUNICIPALITY : ELORA
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,476
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.068 1000 M3 DESIGN BOD5 : 210.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	25.340	.817	1.100	1.400	122.5	25.0	79	2.4	182.5	45.9	74	3.4	8.1	.7	90	.187
FEB	21.310	.734	.880	1.400	135.0	15.5	88	2.5	207.5	37.1	82	3.6	9.6	1.3	86	.177
MAR	25.720	.829	1.200	1.400	132.5	14.0	89	3.0	255.0	37.0	85	5.6	9.5	1.3	86	.211
APR	31.230	1.041	1.500	1.400	140.0				230.0	44.0	80	5.8	8.9	.7	91	.254
MAY	28.830	.930	1.300	1.400	140.0	36.0	74	2.9	245.0	43.6	82	5.8	12.0	.9	91	.317
JUN	25.410	.847	.990	1.400	132.5	23.5	82	2.7	220.0	38.5	82	4.6	8.9	1.0	88	.201
JUL	25.350	.817	.910	1.400						22.0				.8		
AUG	20.310	.655	.870	1.600												
SEP																
OCT			OPERATIONAL		SWITCH			TO	MUNICIPAL							
NOV																
DEC																
TOTAL	203.500			11.400				13.8				28.9				1.347
AVERAGE		.834			133.7	22.8	82		223.3	38.3	82		9.5	.9	89	
MAXIMUM			1.500	1.600												
NO. OF SAMPLES					10	9			10	111			10	118		

NORTH DUMFRIES (P.V. AYR)

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001943 P. V. AYR M P C P (STARTED MAR 80)

MUNICIPALITY : NORTH DUMFRIES (P.V.AYR)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 4,810
POPULATION SERVED : 1,300
PERCENT SERVED : 27.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.181 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN																
FEB																
MAR																
APR																
MAY	3.879	.125	.140		22.0	8.0	63		21.0	20.0	4		4.4	3.7	15	.003
JUN	4.573	.152	.182		32.0	5.0	84	.1	30.0	12.0	60		2.8	.9	67	.009
JUL	5.085	.164	.187		57.0	4.0	92	.2	43.0	10.0	76	.1	4.5	.7	84	.019
AUG	5.584	.180	.195		50.0	4.0	92	.2	89.0	8.0	91	.4	3.8	.3	92	.020
SEP	6.521	.217	.236		137.0	5.0	96	.8	135.0	10.0	92	.8	6.3	.8	87	.036
OCT	7.725	.249	.310		139.0	4.0	97	1.0	107.0	16.0	85	.7	6.5	.9	86	.043
NOV	8.324	.277	.327		141.0	8.0	94	1.1	117.0	20.0	82	.8	7.7	1.0	87	.056
DEC	9.741	.314	.430		229.3	4.5	98	2.1	463.3	12.7	97	4.3	9.0	.7	91	.080
TOTAL	51.432							5.9				7.4				.266
AVERAGE		.210			100.9	5.3	94		125.6	13.5	89		5.6	1.1	79	
MAXIMUM			.430													
NO. OF SAMPLES					28	27			30	29			26	33		

DESIGN DATA - METRIC

PARIS

PROJECT: Town of Paris WPCP

PROJECT NO.: 2-0034-59

TREATMENT: Extended Aeration

DESIGN FLOW: 2.27 $10^3 m^3/d$

DESIGN POPULATION: 3,600

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 170 mg/l

PRETREATMENT

Grit Removal

Type: Channel: manually cleaned
Size: Two 7.6m x .8m x .8m

Comminution

Type: Jones & Atwood (1)

RAW SEWAGE PUMP

Type: Worthington
Size: Two 25.36 l/s @ 3.7m TDH

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical: single-pass
Size: Two 29.2m x 9.8m x 3.05m
Retention: 17.9 hr.
Volume: 1691.1 m^3

Aerators

- Ames Crosta (6)

Secondary Sedimentation

Type: Dorr
Size: Two 11.0m x 11.0 x 2.7m swd
Volume: 659.17 m^3
Retention: 3.5 hr.
Loading: Surface, 9.44 m^3/m^2-d
Weir, 25.87 m^3/m-d

CHLORINATION

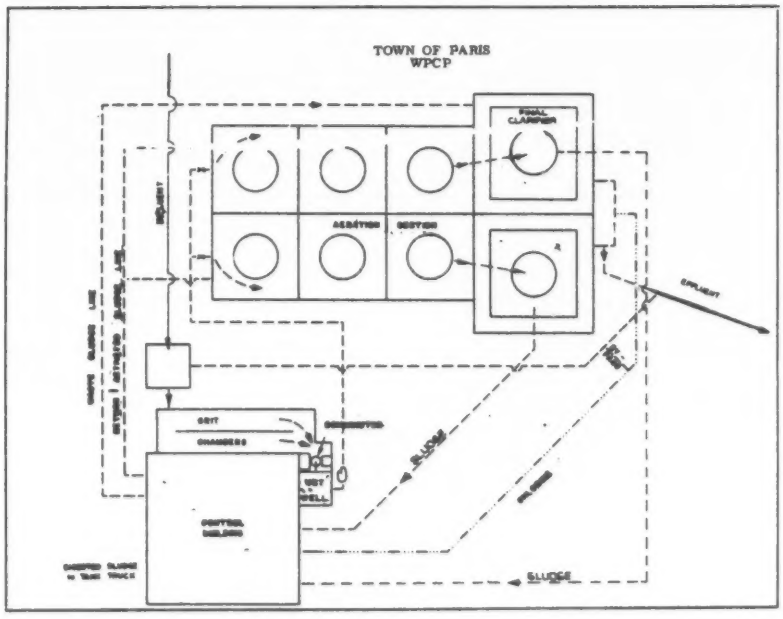
Type: W & T
Size: One 181 kg/day

Chlorine Contact Chamber

- in outfall

OUTFALL

- to Grand River



DESIGN DATA - IMPERIAL

PROJECT NO.	3-0034-59
TREATMENT	Extended Aeration
DESIGN FLOW	0.50 mgd
DESIGN POPULATION	3,600
BOD - Raw Sewage	200 mg/l
SS - Raw Sewage	170 mg/l

PRETREATMENT

Grit Removal

Type: Channel; manually cleaned
Size: Two 25 X 2½ X 2½'

Comminution

Type: Jones & Atwood (1)

RAW SEWAGE PUMP

Type: Worthington
Size: Two 335 gpm @ 12' tdh

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical; single-pass
Size: Two 96 X 32 X 10' (372,000 gal)
Retention: 17.9 hr

Aerators

- Ames Crosta (6)

Secondary Sedimentation

Type: Dorr
Size: Two 36 X 36 X 9' swd
(145,000 gal)
Retention: 3.5 hr
Loading: Surface, 193 gal/ft^2/day
Weir, 1736 gal/ft/day

CHLORINATION

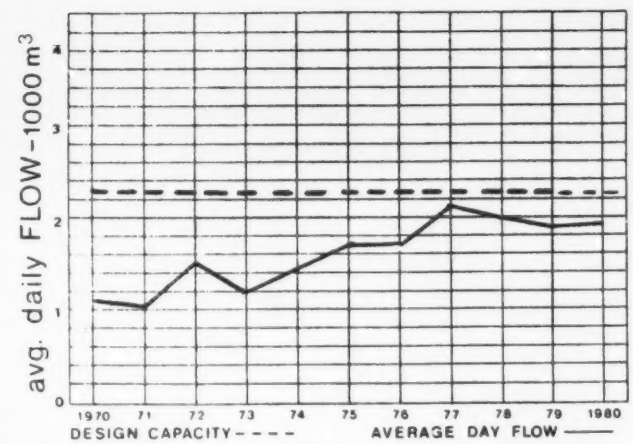
Type: W & T
Size: One 400 lb/day

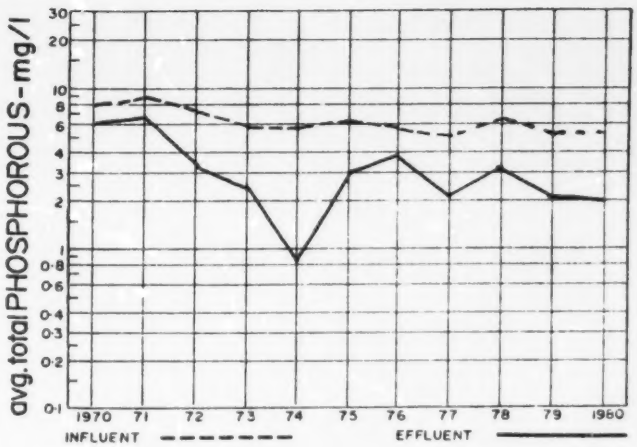
Chlorine Contact Chamber

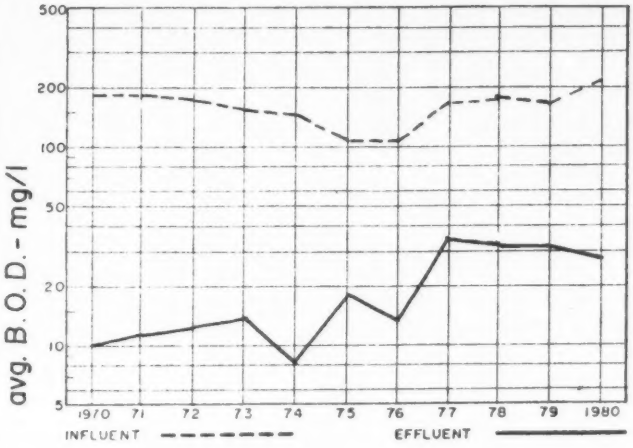
- in outfall

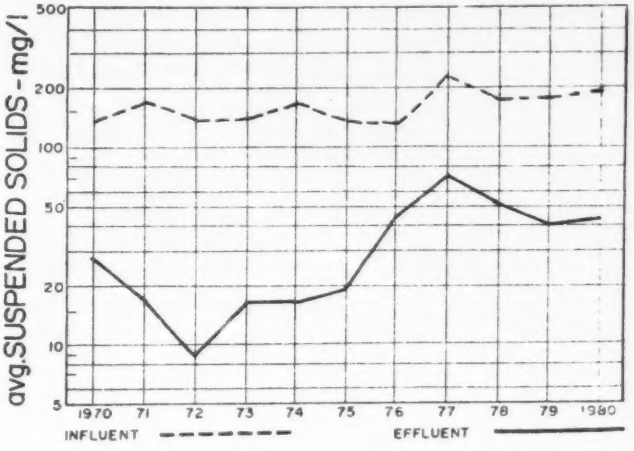
OUTFALL

- to Grand River









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001097 PARIS MPCP

MUNICIPALITY : PARIS
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 7,048
POPULATION SERVED : 5,000
PERCENT SERVED : 70.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.273 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 170.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	64.920	2.090	2.680	4.090	182.3	29.7	83	9.9	167.8	33.7	79	8.7	5.1	1.6	67	.226
FEB	52.880	1.820	2.130	4.460	209.2	49.0	76	8.4	162.7	43.0	73	6.3	4.6	1.3	71	.175
MAR	58.500	2.010	2.870	4.460	185.7	29.2	84	9.1	219.0	37.5	82	10.6	4.8	1.2	74	.209
APR	70.570	2.350	3.220	4.460	171.4	25.2	85	10.3	164.8	20.4	87	10.1	5.5	1.8	67	.262
MAY	66.810	2.160	2.910	4.460	176.0	26.7	84	9.9	167.7	33.5	80	8.9	5.0	2.6	47	.161
JUN	57.050	1.900	2.470	4.460	180.3	29.2	83	8.6	151.3	50.0	66	5.7	5.9	2.3	61	.205
JUL	54.098	1.750	3.900	4.460	152.0	30.0	80	6.6	233.0	53.0	77	9.7	5.8	3.1	47	.149
AUG	52.912	1.700	2.550	4.460	174.0	20.0	88	8.1	35.0	28.0	20	.3	3.9	1.8	53	.111
SEP	55.320	1.840	2.370	4.460	304.0	38.0	87	14.7	249.0	23.0	90	12.5	7.4	2.3	68	.282
OCT	58.926	1.900	2.630	4.460	293.0	28.5	90	15.5	273.0	54.5	80	12.8	5.1	1.3	74	.224
NOV	54.088	1.800	3.040	4.460	235.0	20.3	91	11.6	243.0	62.6	74	9.7	7.4	2.0	72	.292
DEC	57.750	1.860	2.500	4.460	310.5	33.5	89	15.9	222.0	79.5	64	8.2	7.7	2.8	63	.283
TOTAL	703.824							129.1				104.0				2.579
AVERAGE		1.932			214.4	29.9	86		190.6	43.2	77		5.7	2.0	64	
MAXIMUN			3.900	4.460												
NO. OF SAMPLES					43	43			44	44			41	37		

DESIGN DATA - METRIC

WELLESLEY

PROJECT: Wellesley Twp. WPCP
PROJECT NO.: 1-0343-68

TREATMENT: Contact Stabilization plant operated as Extended Aeration

DESIGN FLOW: $0.5 \times 10^3 m^3/d$

BOD - Raw Sewage 200 mg/l
- Removal 93%

SS - Raw Sewage 250 mg/l
- Removal 94%

RAW SEWAGE PUMPS
Size: Two, each 20.19 l/s @ 8.23m TDH

GRIT REMOVAL FACILITIES
None

COMMINUTOR
Type: One, Worthington 12c4
Size: "A"
(bar screen in bypass channel)

BIOLOGICAL TREATMENT

CONTACT TANK
Volume: 55.46 m^3
Retention: 2.7 hr.

REAERATION
Volume: 115.47 m^3
Retention: 5.5 hr.

BLOWERS
Type: Three, Roots 67RAI
Size: each 1530 rpm

CLARIFIER
Size: 7.0m dia. x 4.7m swd
Volume: 158.65 m^3
Retention: 7.6 hr.

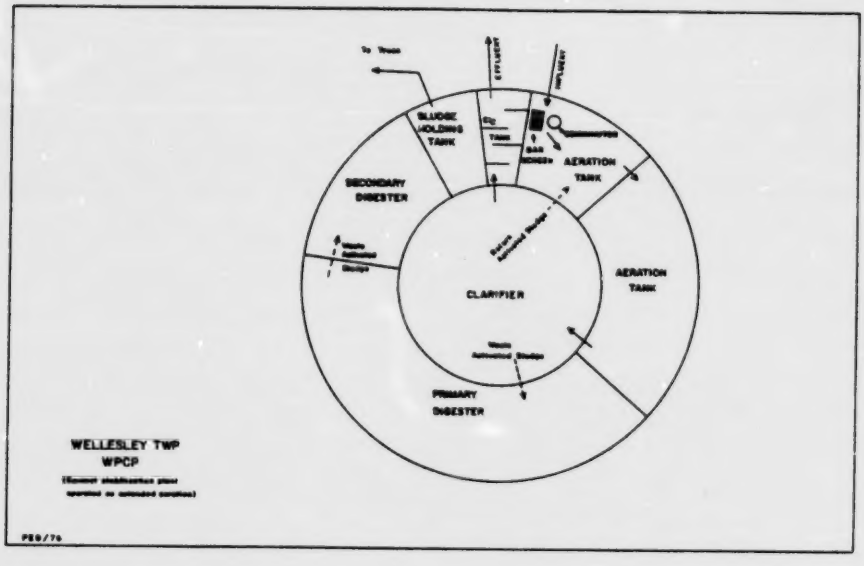
AEROBIC DIGESTER 1
Volume: 204.11 m^3

AEROBIC DIGESTER 2
Volume: 72.28 m^3

SLUDGE HOLDING TANK
Volume: 30.46 m^3

CHLORINE CONTACT CHAMBER
Volume: 22.23 m^3
Retention: 1.1 hr.

CHLORINATOR
Type: One F and P



DESIGN DATA - IMPERIAL

PROJECT: Wellesley Twp. WPCP

PROJECT NO. 1-0178-68

TREATMENT: Contact Stabilization plant operated as Extended Aeration

DESIGN FLOW: 0.11 mgd

BOD - Raw Sewage 200 mg/l
- Removal 93%

SS - Raw Sewage 250 mg/l
- Removal 94%

RAW SEWAGE PUMPS
Size: Two, each 320 USgpm @ 27'TDH

GRIT REMOVAL FACILITIES
None

COMMINUTOR
Type: One, Worthington 12c4
Size: "A"
(bar screen in bypass channel)

BIOLOGICAL TREATMENT

CONTACT TANK
Volume: 12,200 I.G.
Retention: 2.7 hr

REAERATION
Volume: 25,400 I.G.
Retention: 5.5 hr

BLOWERS
Type: Three, Roots 67RAI
Size: each 1530 rpm

CLARIFIER
Size: 23' dia.x15.5'swd
Volume: 34,900 I.G.
Retention: 7.6 hr

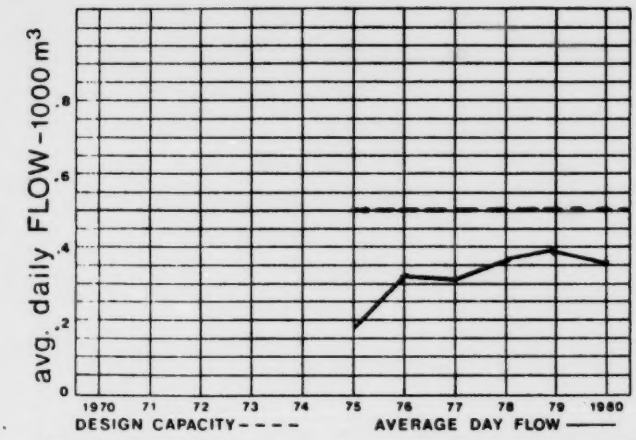
AEROBIC DIGESTER 1
Volume: 44,900 I.G.

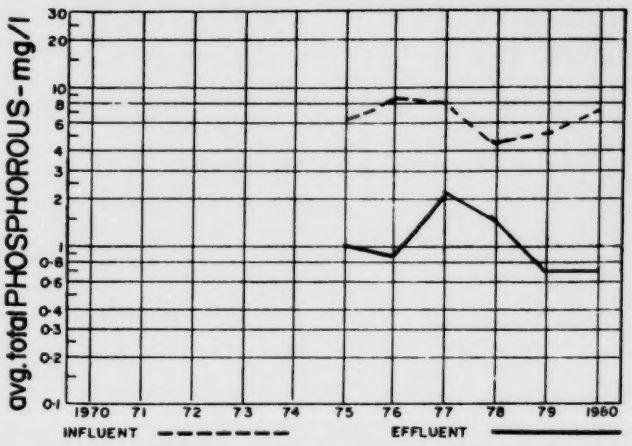
AEROBIC DIGESTER 2
Volume: 15,900 I.G.

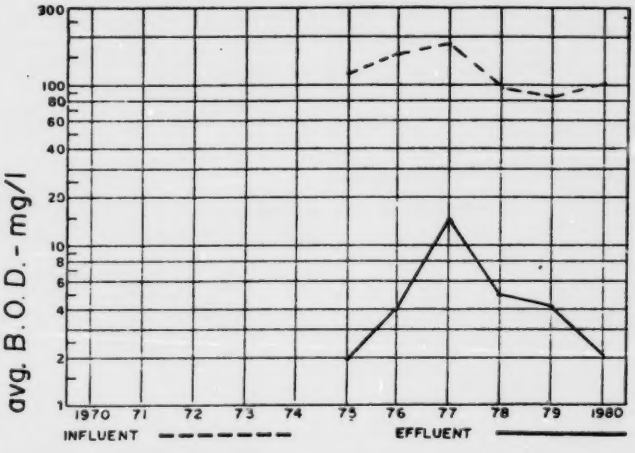
SLUDGE HOLDING TANK
Volume: 6,700 I.G.

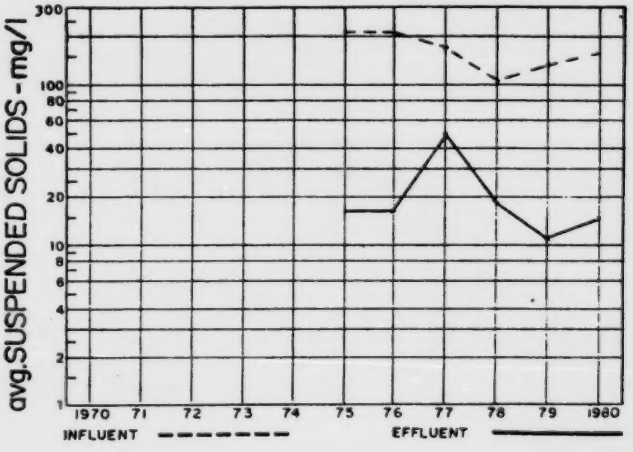
CHLORINE CONTACT CHAMBER
Volume: 4,890 I.G.
Retention: 1.1 hr

CHLORINATOR
Type: One F and P









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001578 MELLESLEY MPCP

MUNICIPALITY : MELLESLEY
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 6,531
POPULATION SERVED : 925
PERCENT SERVED : 14.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.500 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	12.608	.406	.584		88.0	*			156.0	13.0	91	1.8	6.3	.4	92	.073
FEB	9.936	.342	.801	.730	80.0	1.6	98	.7	187.0	16.0	91	1.6	7.4	.6	91	.068
MAR	14.379	.463	1.600		111.0	4.0	96	1.5	142.0	17.0	88	1.7	6.4	.6	89	.083
APR	16.539	.551	1.132		35.0	2.1	94	.5	101.0	18.5	81	1.3	2.4	.6	74	.032
MAY	11.924	.395	.686		92.0	1.0	98	1.0	160.0	13.0	91	1.7	6.7	.4	94	.075
JUN	10.057	.335	.535		67.0	2.5	96	.6	157.0	16.0	89	1.4	3.4	.4	87	.030
JUL	10.035	.323	.583	1.760	90.0	2.5	97	.8	138.0	13.0	90	1.2	7.3	.6	91	.067
AUG	8.885	.286	.402	.770	90.0	1.2	98	.7	165.0	11.0	93	1.3	7.3	1.6	78	.051
SEP	9.010	.300	.487	1.640	153.0	2.5	98	1.3	194.0	15.0	92	1.6	11.3	.8	92	.094
OCT	9.723	.313	.400	.850	167.0	2.5	98	1.5	163.0	15.0	90	1.4	13.5	.4	96	.127
NOV	9.029	.300	.413	.680	109.0	2.5	97	.9	182.0	16.0	91	1.4	10.0	.7	93	.084
DEC	11.991	.386	.707	1.300	135.0	3.0	97	1.5	122.0	11.0	90	1.3	9.2	.9	89	.099
TOTAL	134.116							11.7				18.3				.883
AVERAGE		.367			101.4	2.3	97		155.5	14.5	90		7.6	.7	90	
MAXIMUM			1.600	1.760												
NO. OF SAMPLES					21	19			85	84			21	19		

DESIGN DATA - METRIC

WILMOT (BADEN)

PROJECT: Wilmot Twp. (Baden) WPCP
PROJECT NO.: 1-0351-66
TREATMENT: Extended Aeration
DESIGN FLOW 0.923 $10^3 m^3/d$
BOD - Raw Sewage - 240 mg/l
SS - Raw Sewage - 300 mg/l

PRETREATMENT

RAW SEWAGE PUMPS

Type: Two, Crane STF centrifugal
Size: each 36.34 l/s @ 11.58 m TDH

OPEN CHANNELS

Size: Two, each 0.46m x 5.8m x 0.7m
Volume: (each) $1.773 m^3$
Retention: (one): 2.8 min

COMMINUTOR

Type: Heligear HTMI
Size: 50 rpm

BIOLOGICAL TREATMENT

AERATION TANK

Volume: $1609.2 m^3$
Retention: 26.2 hr.

CLARIFIER

Size: 8.2m i.d. x 6.9m
Volume: $213.21 m^3$
Retention: 5.5 hr.
Loading -
- Surface: $18.68 m^3/m^2 \cdot d$
- Weir: $87.01 m^3/m \cdot d$

BLOWERS

Type: Three, Roots 76RAl

AEROBIC DIGESTER

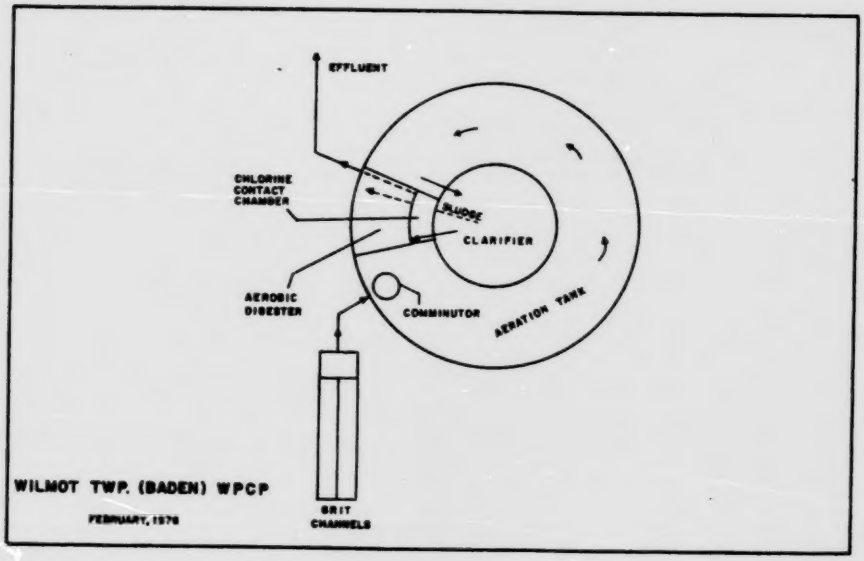
Volume: $86.37 m^3$

CHLORINE CONTACT CHAMBER

Volume: $21.37 m^3$
Retention: 33 min.

CHLORINATOR

Type: W and T v-800
Size: 22.68 Kg/day



DESIGN DATA - IMPERIAL

PROJECT: Wilmot Twp (Baden) WPCP

PROJECT NO. 1-0036-66

TREATMENT: Extended Aeration

DESIGN FLOW: 0.203 MIGD

BOD - Raw Sewage - 493 lb/day

SS - Raw Sewage - 620 lb/day

PRETREATMENT

RAW SEWAGE PUMPS

Type: Two, Crane STF centrifugal
Size: each 480 gpm @ 38' TDH

GRIT CHANNELS
Size: Two, each 1.5' x 19' x 2.2'
Volume: (each) 390 I.G.
Retention (one): 2.8 min

COMMINUTOR
Type: Heligear HTMI
Size: 50 rpm

BIOLOGICAL TREATMENT

AERATION TANK
Volume: 222,000 I.G.
Retention: 26.2 hr

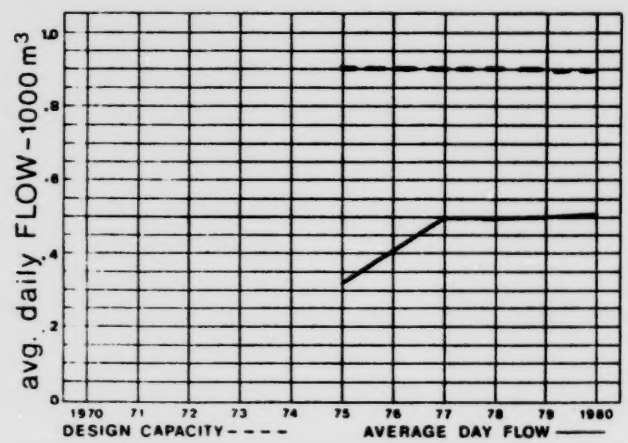
CLARIFIER
Size: 27' i.d. x 12.8' swd
Volume: 46,900 I.G.
Retention: 5.5 hr
Loading -
- Surface: 382/I.G./ft^2/day
- Weir: 2484 I.G/ft/day

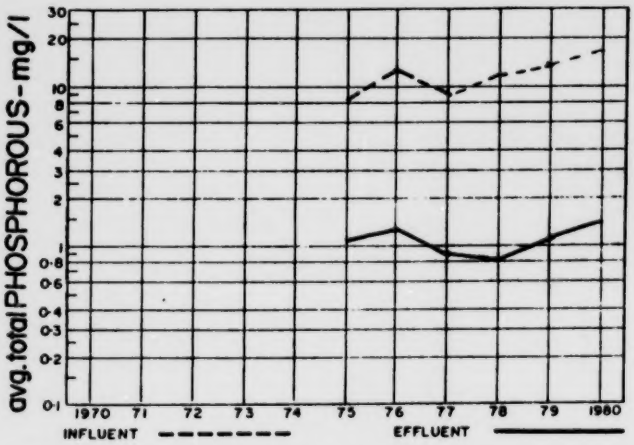
BLOWERS
Type: Three, Roots 76RAl

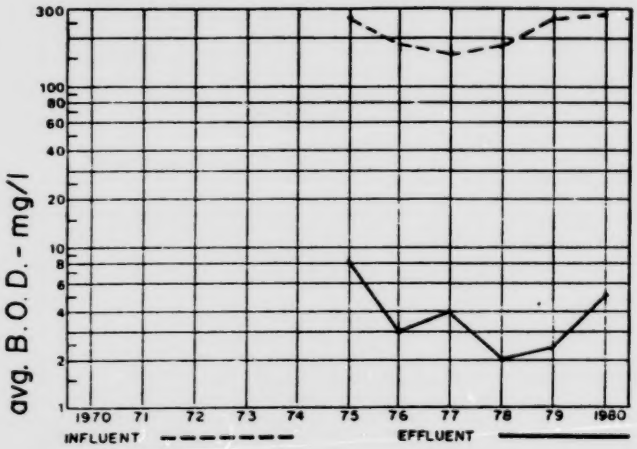
AEROBIC DIGESTER
Volume: 19,000 I.G.

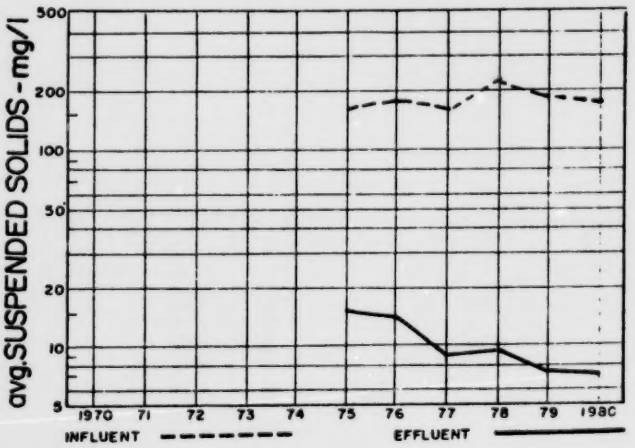
CHLORINE CONTACT CHAMBER
Volume: 4700 I.G.
Retention: 33 min

CHLORINATOR
Type: W and T v-800
Size: 50 lb/day









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SENAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001710 BADEN WPCP

MUNICIPALITY : WILMOT (BADEN)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 10,731
POPULATION SERVED : 900
PERCENT SERVED : 8.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.922 1000 M3 DESIGN BOD5 : 240.0 MG/L DESIGN SUSP.SOLIDS : 300.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	15.046	.485	.956	2.270	105.0	3.0	97	1.5	185.0	6.0	96	2.6	16.0	1.5	90	.218
FEB	13.125	.453	.524	1.450	210.0	1.7	99	2.7	242.5	6.0	97	3.1	13.0	1.4	89	.152
MAR	16.686	.538	.992	3.270	342.5	2.6	99	5.6	172.5	5.5	96	2.7	15.0	1.3	91	.229
APR	18.594	.619	1.200	1.770	205.0	23.0	88	3.3	147.5	5.5	96	2.6	14.1	.8	93	.247
MAY	16.091	.519	.672	1.720	197.5	9.0	95	3.0	155.0	5.5	96	2.4	19.8	1.2	93	.299
JUN	15.135	.505	.667	1.320	188.0	9.5	94	2.7	146.0	15.6	89	1.9	14.1	1.4	89	.192
JUL	16.873	.544	.904	2.050	240.0	7.9	96	3.9	155.0	20.8	86	2.2	18.7	2.0	88	.281
AUG	16.897	.545	.750	1.140	245.0	1.4	99	4.1	152.5	7.3	95	2.4	18.5	1.1	93	.294
SEP	17.817	.594	.693	1.500	328.0	1.9	99	5.8	172.5	6.0	96	2.9	*	1.9		
OCT	14.474	.466	.618	1.090	375.0	2.2	99	5.3	197.5	5.0	97	2.7	21.0	.7	96	.293
NOV	15.368	.512	.629	1.000	475.0	1.8	99	7.2	252.5	5.0	98	3.8	24.0	1.4	94	.347
DEC	13.791	.445	.558	1.680	380.0	2.0	99	5.2	210.0	5.0	97	2.8	17.0	1.4	91	.215
TOTAL	189.897							50.7				32.7				2.767
AVERAGE		.519			274.2	5.5	97		182.3	7.7	95		17.3	1.3	92	
MAXIMUM			1.200	3.270												
NO. OF SAMPLES					38	27			38	27			38	118		

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

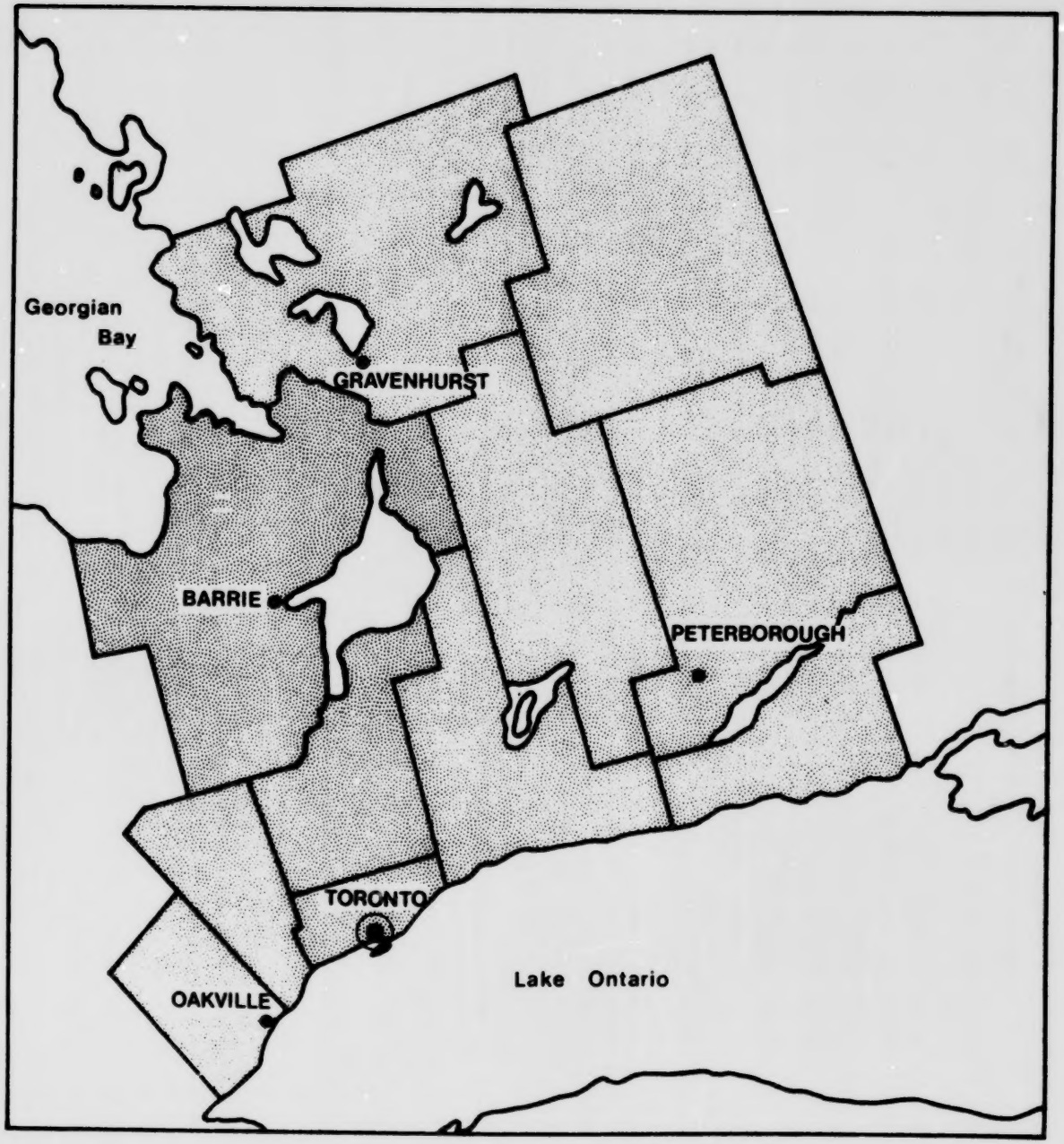
SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386

Ministry of the Environment
Ontario

Central Region

③



DESIGN DATA - METRIC

ALLISTON (T) WPCP

PROJECT NO. 1-0074-67 TREATMENT: Extended Aeration

DESIGN CAPACITY 3.5 $10^3 m^3/d$

DESIGN BOD 155 mg/l

SS 200 mg/l

PRETREATMENT

GRIT CHANNELS:

Two, each .8m x 7.6m x..8m swd
Detn: 3.6 min at Des. MGD

COMMINUTOR:

SALA 38cm 37.5 RPM powered by .56 kW Motor

BAR SCREEN:

in one Grit channel

BIOLOGICAL TREATMENT

AERATION TANKS:
Two, 17.7m dia. x 4.6m swd
Volume: (total) 2097.48m^3 Detn: 14.4 hr.
Aerators: Two AMES-CROSTA type - 60
with 18.6 kW motor

SECONDARY CLARIFIERS:
10.7m dia. x 3.5m swd
Volume (total) 545.5m^3 Detn: 3.7 Hr.
Overflow rate: 21.99 m^3/m^2-d

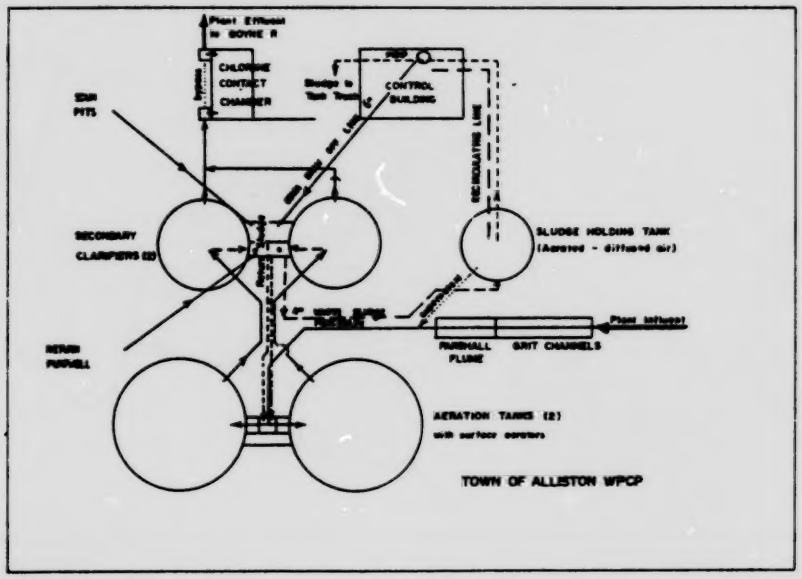
CHLORINE CONTACT CHAMBER:

5 passes, each pass 1.09m x 4.6m x 2.1m swd.
Volume (total) 51.65m^3 Detn: 21 min.
Chlorinator: W & T model A-741

SLUDGE DISPOSAL

SLUDGE HOLDING TANK:

4.9m dia. x 41.9m swd
Volume 96.375 m^3
Sludge pump: CARTER Series 800 plunger
4.73 l/s at 18.3 TDH powered by 2.2 kW motor
Blower: SUTORBILT Mod. 3HV13



DESIGN DATA - IMPERIAL

ALLISTON (T) WPCP

PROJECT NO. 1-0074-67
Design Capacity 0.77 MGD
Design BOD 155 mg/l
Design SS 200 mg/l

PRETREATMENT

GRIT CHANNELS:

Two, each 2.5' x 25.0' x 2.5' swd
Detn: 3.6 min at Des. MGD

COMMINUTOR:

SALA 15" 37.5 Rpm powered by
3/4 HP motor

BAR SCREEN:

in one Grit channel

BIOLOGICAL TREATMENT

AERATION TANKS:

Two, 58.0' dia. x 15.0' swd
Volume: (total) 461,380 I. gal. Detn: 14.4 hr.
Aerators: Two AMES-CROSTA type - 60
with 25 HP motor.

SECONDARY CLARIFIERS:

35.0' dia x 10.0' swd
Volume (total) 120,000 I. gal. Detn: 3.7 hr.
Overflow rate 450 gpd I ft^2.

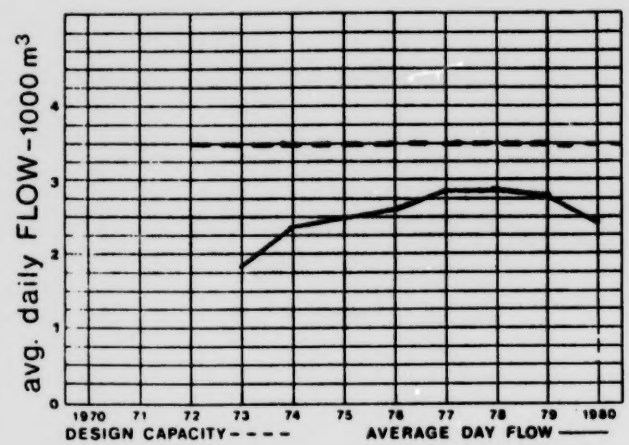
CHLORINE CONTACT CHAMBER:

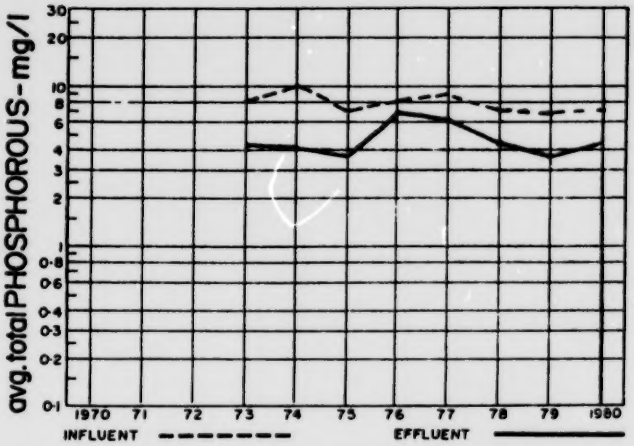
5 passes, each pass 3.6' x 15.0' x 6.75' swd
Volume (total) 11370 I. gal. Detn: 21 min.
Chlorinator: W & T model A-741

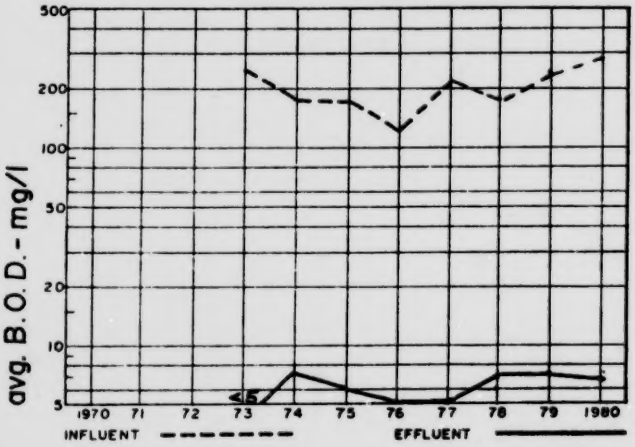
SLUDGE DISPOSAL

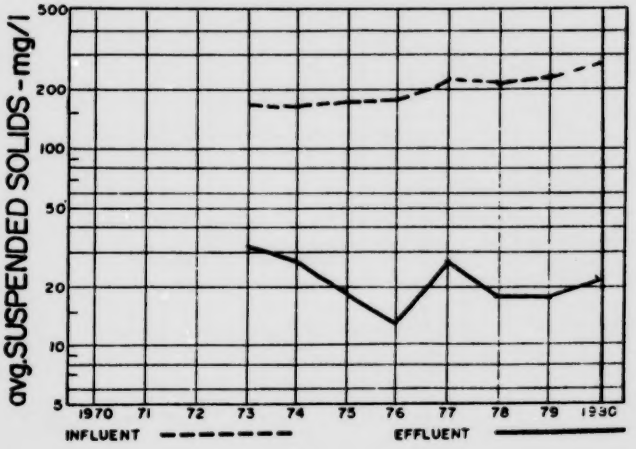
SLUDGE HOLDING TANK:

16.0' dia. x 16.0' swd
Volume 21,200 I. gal.
Sludge pump: CARTER Series 800 plunger
75 USGPM at 60' TDH powered by 3 HP motor.
Blower: SUTORBILT Mod. 3HV13









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001220 ALLISTON MPCP

MUNICIPALITY : ALLISTON
REGION : 03 CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 4,675
POPULATION SERVED : 4,675
PERCENT SERVED : 100.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.500 1000 M3 DESIGN BODS : 155.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	73.136	2.359	2.690	8.600	303.0	9.0	97	21.5	318.0	18.0	94	21.9	11.0	5.7	48	.388
FEB	63.110	2.176	2.435	3.700	308.0	12.0	96	18.6	250.0	25.0	90	14.2	8.2	4.4	46	.240
MAR	71.415	2.304	3.198	7.300	405.0	10.0	97	28.2	347.0	53.0	84	20.9	9.9	4.9	50	.357
APR	81.651	2.722	3.910	10.000	186.0	8.5	95	14.4	185.0	32.5	82	12.4	6.6	5.0	24	.131
MAY	79.952	2.579	2.973	4.800	265.0	2.8	98	20.9	228.0	13.0	94	17.1	8.5	4.2	50	.344
JUN	73.530	2.451	2.733	6.600	230.0	7.0	96	16.3	263.0	27.0	89	17.3	5.3	4.2	20	.081
JUL	83.084	2.680	4.199	10.000	227.0	3.4	98	18.5	224.0	7.2	96	18.0	4.6	3.5	23	.091
AUG	83.536	2.695	3.139	10.000	223.0	4.0	98	18.2	233.0	14.5	93	18.2	7.3	4.4	39	.242
SEP	78.849	2.628	3.167	10.000	253.0	2.5	99	19.7	320.0	5.5	98	24.7	6.6	3.7	43	.229
OCT	78.407	2.529	2.905	6.300	398.0	5.7	98	30.7	265.0	13.5	94	19.7	7.2	3.8	47	.267
NOV	69.095	2.303	2.589	4.100	410.0	10.7	97	27.5	485.0	17.5	96	32.3	5.8	4.9	16	.066
DEC	72.255	2.331	3.028	5.600	250.0	6.2	97	17.6	243.0	27.0	88	15.6	7.7	4.7	38	.217
TOTAL	908.020							252.8				232.8				2.653
AVERAGE		2.480			288.1	6.8	97		280.0	21.1	92		7.3	4.4	39	
MAXIMUM			4.199	10.000												
NO. OF SAMPLES					27	27			26	27			27	27		

DESIGN DATA - METRIC

COLDWATER

PROJECT: Village of Coldwater

PROJECT NO.: 1-0020-66

TREATMENT: Extended aeration

DESIGN FLOW: Q$_{AA}$ $10^3 m^3/d$

BOD - Raw Sewage 170 mg/l

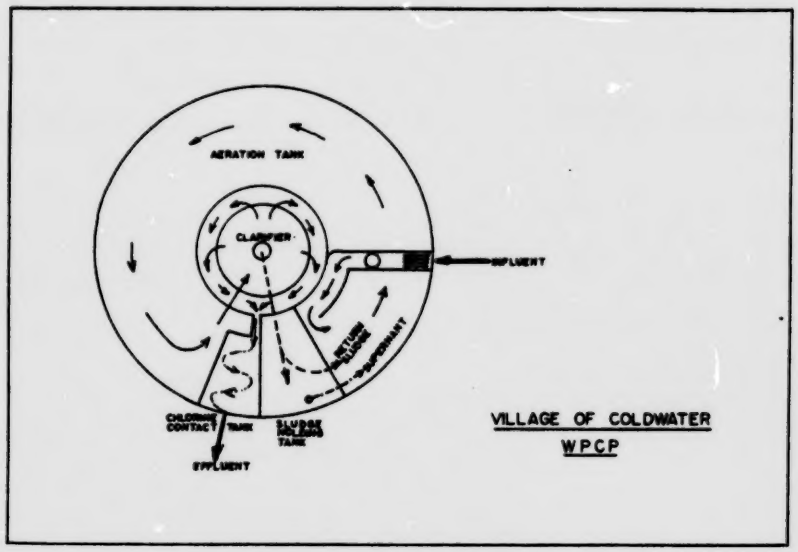
SS - Raw Sewage 200 mg/l

PUMPING STATIONS

No. 1 - 2 submersible pumps plus one standby @ 18.77 l/s when two running

No. 2 - 2 submersible pumps @ 17.18 l/s

No. 3 - 1 submersible pump @ 6.16 l/s.



DESIGN DATA - IMPERIAL

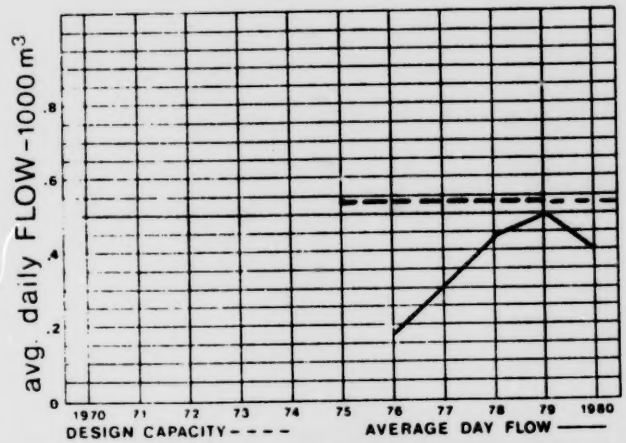
PROJECT	Village of Coldwater
PROJECT NO.	1-0020-66
TREATMENT	Extended Aeration
DESIGN FLOW	0.120 mgd
BOD - Raw Sewage	170 mg/l
SS - Raw Sewage	200 mg/l

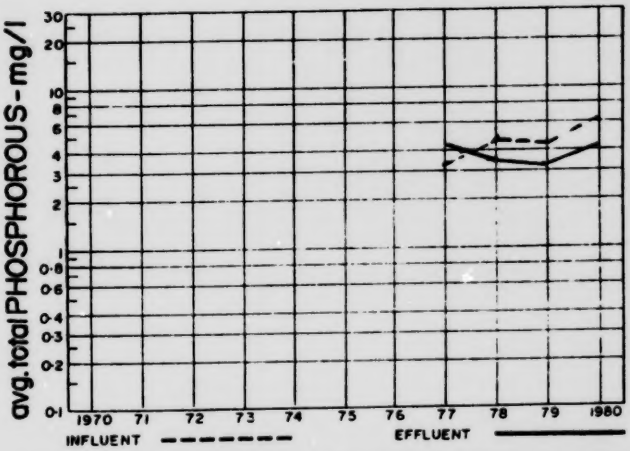
PUMPING STATIONS

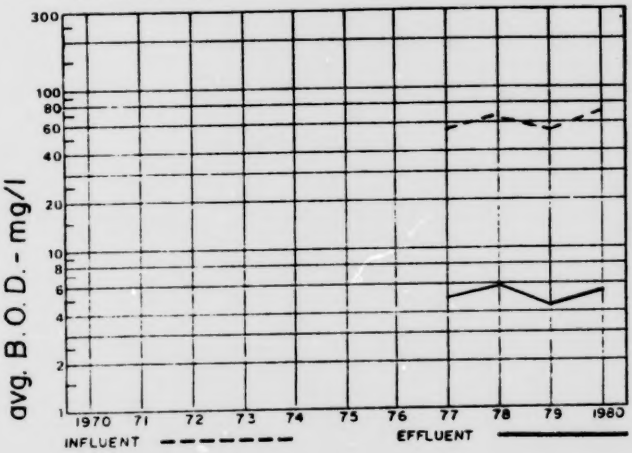
No. 1- 2 submersible pumps plus one standby @ 248 Igpm when two running

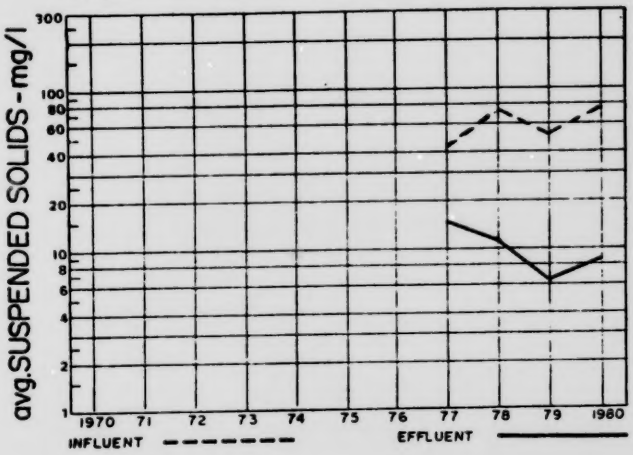
No. 2- 2 submersible pumps @ 227 Igpm each

No. 3- 1 submersible pump @ 81.4 Igpm









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001596 COLDWATER MPCP

MUNICIPALITY : COLDWATER
REGION : 03 CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 804
POPULATION SERVED : 740
PERCENT SERVED : 92.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.545 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	15.272	.493	.691		23.0	3.5	84	.2	40.0	7.0	82	.5	2.0	2.8	-	-
FEB	10.768	.371	.437		125.0	5.0	96	1.2	125.0	6.0	95	1.2	7.5	5.1	32	.026
MAR	16.722	.539	2.064		31.0	8.5	72	.3	45.0	8.0	82	.6	3.0	4.1	-	-
APR	13.366	.446	.691		14.0	12.0	14		25.0	9.0	64	.2	1.6	2.7	-	-
MAY	9.671	.312	.441		125.0	4.5	96	1.1	155.0	5.0	96	1.4	9.1	4.7	48	.043
JUN	11.478	.383	.518		62.0	5.5	91	.6	90.0	9.0	90	.9	16.0	4.8	70	.129
JUL	9.897	.319	.691		34.0	1.8	94	.3	47.0	5.0	89	.4	2.2	4.8	-	-
AUG	11.907	.384	.596		145.0	3.0	97	1.6	55.0	11.0	80	.5	11.0	5.4	50	.067
SEP	10.502	.350	.436		29.0	3.0	89	.2	40.0	5.0	87	.3	2.2	5.1	-	-
OCT	14.182	.457	.691		23.0	9.0	60	.1	55.0	15.0	72	.5	3.5	3.0	14	.007
NOV	12.777	.426	.518		110.0	7.5	93	1.3	110.0	15.0	86	1.2	8.6	4.1	52	.057
DEC	12.641	.408	.741		100.0	3.5	96	1.2	140.0	5.0	96	1.7	7.1	3.4	52	.047
TOTAL	149.183							8.8				9.7				.376
AVERAGE		.407			68.4	5.5	91		77.2	8.3	89		6.1	4.1	32	
MAXIMUM			2.064													
NO. OF SAMPLES					12	12			12	12			12	12		

DESIGN DATA - METRIC

PROJECT: Millbrook

PROJECT NO.: 1-0067-67

TREATMENT: Extended Aeration

DESIGN FLOW: 1.1 $10^3 m^3/d$

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 250 mg/l

Sewage Pumping Station
Type: Three 24.22 l/s submersible sewage pumps. Any two in parallel provide 40.49 l/s @ 10.06 m TDH
Well: One oversized wet well 186.91 m^3 for 4 hours storage at design flow in the event of a power failure.

Inlet Works
Type: Twin grit channels each 6.86m long by 0.46m wide with a proportional descharge weir to control velocities at approx 0.305 m/s
Type: One 304.8mm flowminutor and a bypass channel equipped with a manually cleaned bar screen.
Type: One parshall flume (152.4 mm throat) for measuring raw sewage flows.

Aeration Tank
Size: One 24.38m x 8.53m x 4.27m deep aeration tank
Retention: 18.7 hours at DWF
Power: Two 7.46 kW platform mounted mechanical aerators with upper and lower impellers

MILLBROOK

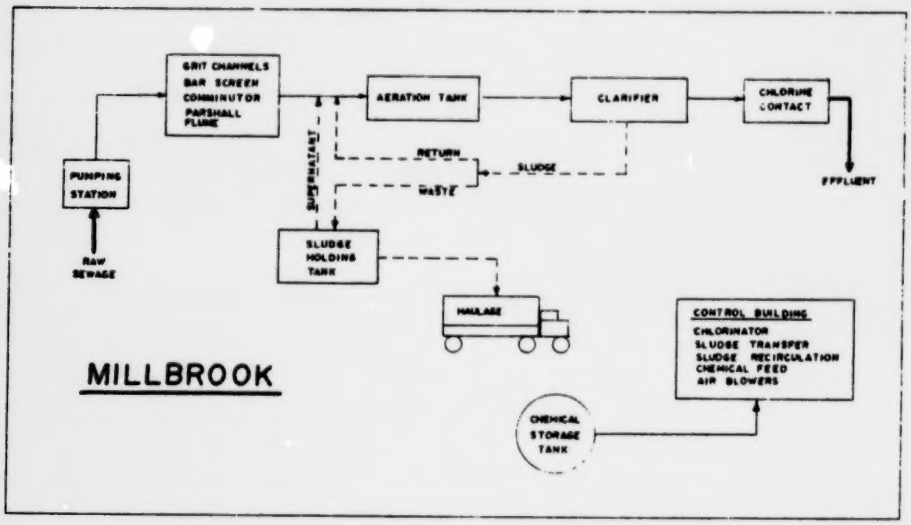
Final Clarification Tank
Size: One rectangular tank 18.59m x 5.79m x 3.05m swd
Rate: 34.222 m^3/m^2-d S.S.R. at peak flow ($3.500\ 10^3 m^3/d$)
Sludge collection by chain and flight longtitudinal and cross collectors.

Chlorination
Type: One chlorine contact chamber
Retention: 30 minutes at DWF
Type: One gas chlorinator - 45.36 kg/d

Sludge Handling
Tanks: Two aerated sludge holding tanks
Size: 2.74m x 3.35m x 3.05m deep
Blower: One rotary positive displacement type blower capable of supplying 16.72 l/s at 41.37 kPa
Pumps: Two horizontal non-clog, activated sludge pumps each capable of pumping 26.19 l/s at 14.33m TDH
Power: One 7.46 kW variable speed motor
One 7.46 kW constant speed motor
293-1170 RPM and 1150 RPM.

Chemical Feed System
Tank: One 27.28 m^3 chemical storage tank for alum, ferric chloride or ferrous sulphate
Pump: Two (one standby) mechanical diaphragm chemical metering duplex pumps each rated at 0.006 l/s at 3.05m TDH to feed to the aeration tank

Out-fall Sewer
48.77 m of 406.4mm dia. sewer discharging to Baxter Creek



DESIGN DATA - IMPERIAL

PROJECT	Millbrook
PROJECT NO.	1-0067-67
TREATMENT	Extended Aeration
DESIGN FLOW	0.250 MIGD
DESIGN BOD	- 200 mg/l
DESIGN SS	- 250 mg/l

SEWAGE PUMPING STATION

Three 320 IGPM submersible pumps. Two in parallel provide 535 IGPM @ 33' T.D.H. One oversized wet well 6,600 cu. ft. Four hours storage of design flow.

INLET WORKS

Twin grit channels each 22.5'x1.5' with a proportional weir control velocity of 1.0 ft/sec.
1 -12 inch flowminutor and a by-pass channel with manually cleaned bar screen. One parshall flume (16" throat) for flow measurement.

AERATION TANK

1 - 80'x28'x14' dp aeration tank. 18.7 hours detention @ DWF. 2 - 10hp platform mounted mechanical aerators.

FINAL CLARIFICATION TANK

1 - tank 61'x19'x10' dp SWD rated at 700 IGPD/ft^2 S.S.R. at peak flow (0.77 MIGD).

CHLORINATION

1 chlorine contact chamber
30 minutes detention at DWF.
1 gas chlorinator - 100 lb/day

SLUDGE HANDLING

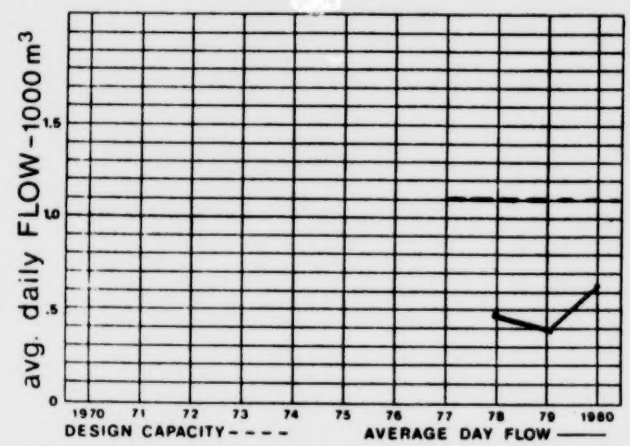
2 aerated sludge holding tanks each 9'x11'x10' dp.
1 rotary positive desplacement type blower capable of supplying 40 CFM @ 6 PSIG.
2 horizontal non-clog, activated sludge pumps each 346 IGPM @ 47' T.D.H.
1 - 10hp variable speed motor and 1 - 10hp constant speed motor, 293-1170 RPM and 1150 RPM.

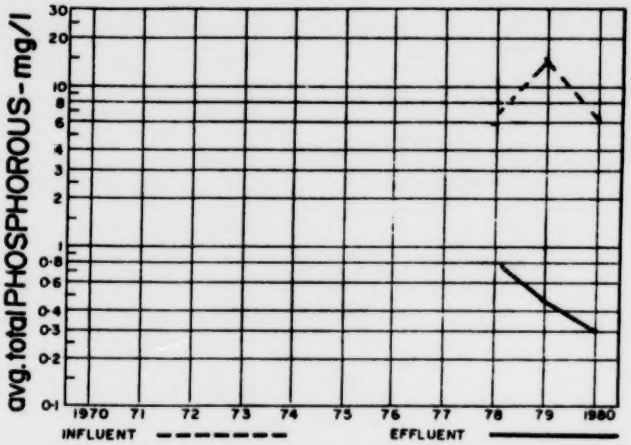
CHEMICAL FEED SYSTEM

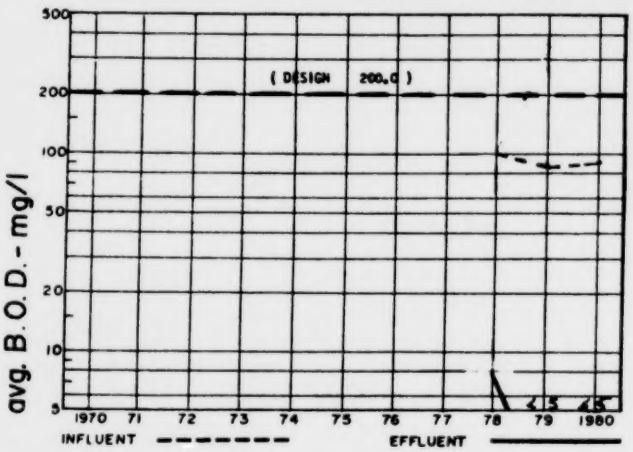
6000 IG. storage tank for alluminum or iron salts. Two (one standby) mechanical diaphragm metering duplex pumps each rated at 5 IGPH at 10' T.D.H. to feed to the aeration tank.

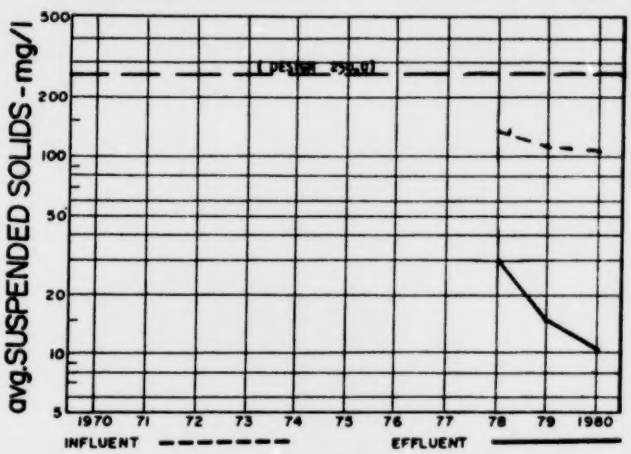
OUTFALL

Discharging to Baxter Creek.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002238 MILLBROOK MPCP

MUNICIPALITY : MILLBROOK
REGION : 03 CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,103
POPULATION SERVED : 892
PERCENT SERVED : 80.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.136 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	12.946	.418	.802		100.0	5.4	94	1.2	105.0	11.0	89	1.2	7.1	.2	96	.089
FEB	12.398	.389	.486		133.0	7.0	94	1.5	130.0	18.0	86	1.3	8.0	.5	93	.092
MAR	17.451	.565	1.436	.396	100.0	9.0	91	1.5	88.0	18.0	79	1.2	9.5	.8	91	.152
APR	24.393	.813	1.145	5.862	89.0	3.0	96	2.0	113.0	16.0	85	2.3	7.2			
MAY	14.592	.470	.958		105.0	3.0	97	1.4	90.0	5.0	94	1.2	5.0	.3	93	.068
JUN	24.267	.808	1.092		146.0	2.0	98	3.4	165.0	8.0	95	3.8	7.7	.1	98	.183
JUL	26.918	.868	1.221		66.5	2.0	96	1.7	78.0	8.0	89	1.8	5.5	.3	94	.139
AUG	27.634	.891	1.258		83.0	5.0	93	2.1	165.0	10.0	93	4.2	6.7	.1	97	.180
SEP	21.397	.713	2.004	.314	67.0	1.5	97	1.4	68.0	7.0	89	1.3	4.3	.1	96	.088
OCT	25.487	.822	1.087	.478	62.5	1.5	97	1.5	95.0	10.0	89	2.1	5.1	.1	96	.127
NOV	28.509	.950	1.089	.521	69.5	3.5	94	1.8	92.5	7.5	91	2.4	3.8	.3	90	.098
DEC	32.154	1.037	1.249	.364	118.0	6.0	94	3.6	116.0	14.0	87	3.2	6.0	.1	97	.188
TOTAL	268.166							23.7				26.5				1.404
AVERAGE		.729			94.9	4.0	95		108.7	11.0	89		6.3	.3	95	
MAXIMUM			2.004	5.862												
NO. OF SAMPLES					23	23			23	23			23	21		

CLARKSON

DESIGN DATA - Metric

PROJECT: Clarkson WPCP

PROJECT NO: 1-0053-66

TREATMENT: Extended Aeration

DESIGN FLOW: 54.5 $10^3 m^3$

BOD: Raw Sewage 185 mg/l

SS-Raw Sewage 200 mg/l

PRIMARY TREATMENT

Screening
Type: Mechanical

GRIT TANKS
Size: Two, (each) 6.4 m x 29.6 m x 4.2 m awl (806.46 m^3)
Retention: (each) 26 min.

SECONDARY TREATMENT

AERATION TANKS
Type: Four-pass, rectangular
Size: Two, each pass 6.2 m x 94.5 m x 4.6 m awl (21507 m^3)
Retention: 11.4 hr

BLOWERS
Size: Two (each 16298 l/s)

SECONDARY SEDIMENTATION
Size: Two, each 76.0 m x 24.3 m x 3.6 m awl (136152 m^3)
Retention: 7.2 hr

SLUDGE PUMPS

Recirculating
Size: Three, (each) 5071.9 l/s

Wasting
Size: Four, (each) 454.2 l/s

CHLORINATORS
Type: Fisher and Porter
Size: Two, each 907.2 Kg/day

SLUDGE HANDLING

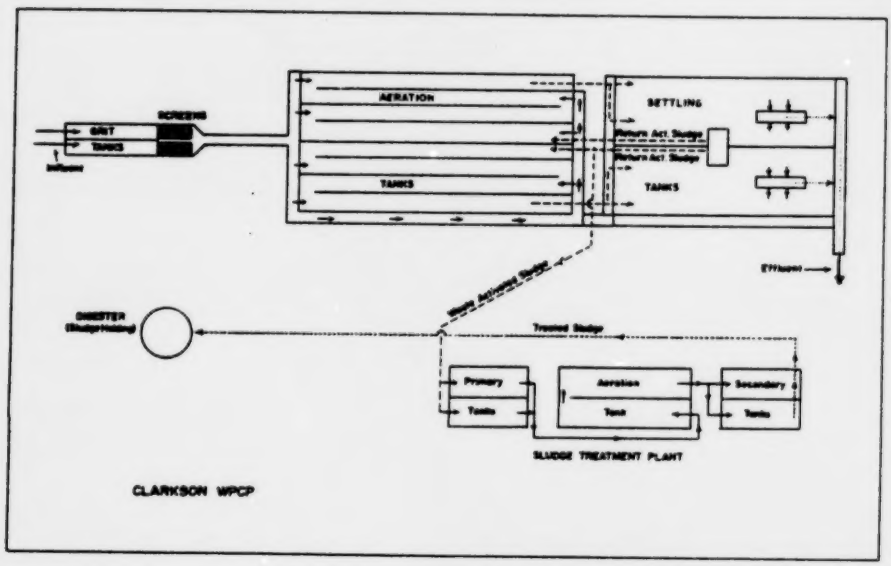
SLUDGE TREATMENT PLANT

PRIMARY SEDIMENTATION
Size: Two, each 18.2 m x 4.3 m x 3.0 m (477.33 m^3)

AERATION
Type: Two-pass, diffused air FLEXOFUSERS
Size: One 36.5 m x 5.5 m x 3.4 m each pass (137.7)
Air Supply: 3 blowers 585.1 l/s, 7.10 l/s, 698.5 l/s (51.7 kPa)

SECONDARY SEDIMENTATION
Size: Two, 22.5 m x 4.3 m x 3.3 m (622.8 m^3 total)

DIGESTER: (used as holding tank)
Type: Concrete fixed-roof gas mixing
Size: One, 55 m dia. x 6.1 m swd (917.6 m^3)



CLARKSON WPCP

PROJECT: Clarkson WPCP

PROJECT NO: 1-0053-66

TREATMENT: Extended Aeration

DESIGN FLOW: 12 mgd

BOD: Raw Sewage 222 mg/l

SS-Raw Sewage 250 mg/l

PRIMARY TREATMENT

SCREENING
Type: Mechanical

GRIT TANKS
Size: Two, (each) 21' x 97.4' x 13.9' awl (177,400 I.G. each)
Retention: (each) 26 min.

SECONDARY TREATMENT

AERATION TANKS
Type: four-pass, rectangular
Size: two, each pass 20.25' x 312' x 15' awl (4,731,000 I.G. total)
Retention: 11.4 hr

BLOWERS
Size : two (each) 39,000 cfm

SECONDARY SEDIMENTATION
Size: two, each 250' x 80' x 12' awl (2,995,000 I.G. total)
Retention: 7.2 hr

SLUDGE PUMPS
Recirculating
Size: three, (each) 6,700 gpm

Wasting
Size: four, (each) 600 gpm

CHLORINATORS
Type: Fisher and Porter
Size: Two, each 2,000 lb/day max.

SLUDGE HANDLING

SLUDGE TREATMENT PLANT

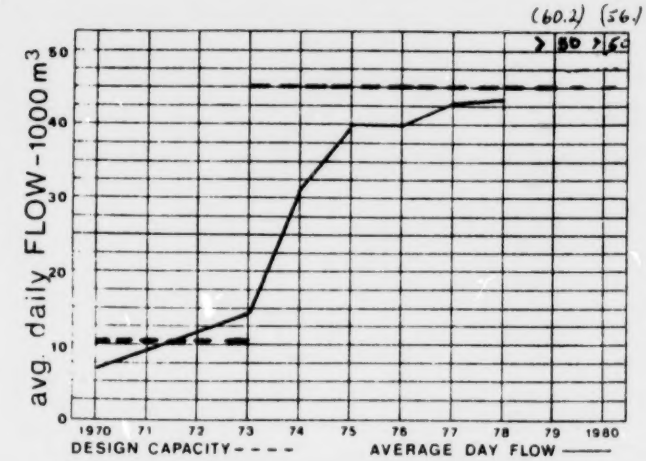
PRIMARY SEDIMENTATION
Size: Two, each 60' x 14' x 10' (105,000 I.G. total)

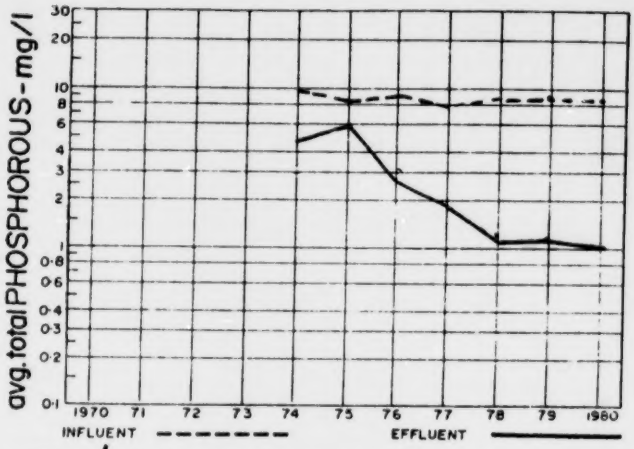
AERATION
Type: two-pass, diffused air FLEXOFUSERS
Size: One, 120' x 18' x 11.25' each pass (303,000 I.G.)
Air Supply: 3 blowers, 1400 cfm, 1700 cfm, 2150 cfm (7.5 psi)

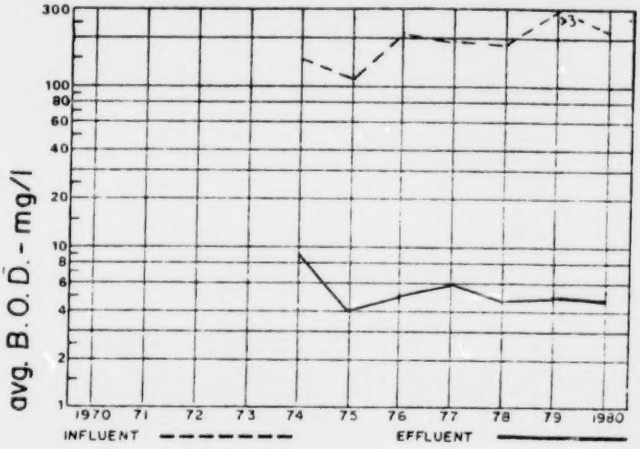
SECONDARY SEDIMENTATION
Size: two, 74' x 14' x 10.75' (137,000 I.G. total)

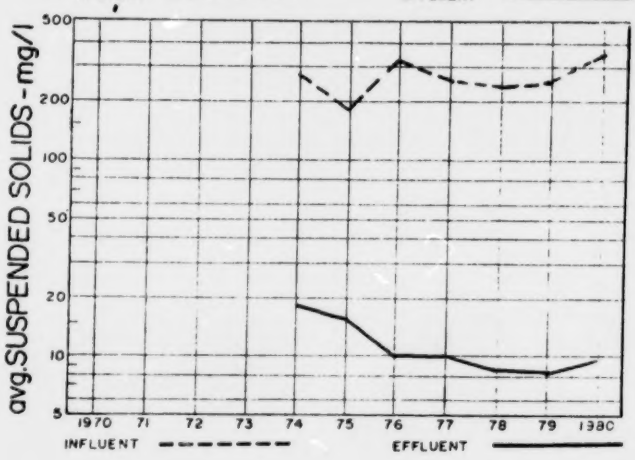
DIGESTER: (used as holding tank)
Type: concrete fixed-roof gas mixing
Size: One, 55' dia x 20' swd (52,400 ft^3)

(60.2) (56.)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001328 CLARKSON WPCP SOUTH-PEEL SYSTEM

MUNICIPALITY : MISSISSAUGA SOUTH-PEEL
REGION : 03 CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 100,000
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 54.552 1000 M3 DESIGN BOD5 : 185.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				SUSPENDED SOLIDS ---><---				TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	2062.200	66.523	85.000	136.400	437.9	4.5	98	893.7	439.4	20.5	95	863.8	7.1	2.6	63	9.280
FEB	1528.700	52.714	59.600	80.000	266.0	5.0	98	398.9	257.0	11.4	95	375.4	7.3	.9	87	9.784
MAR	1885.100	60.810	113.300	236.400	177.0	2.7	98	328.5	245.0	8.5	96	445.8	9.0	.8	91	15.496
APR	2265.300	75.510	134.100	181.800	346.6	6.8	98	769.5	341.0	8.5	97	753.1	6.4	1.0	84	12.436
MAY	1872.300	60.397	72.400	94.600	133.0	6.5	95	236.8	206.0	7.7	96	371.2	7.0	.8	88	11.608
JUN	1819.300	60.640	73.600	113.700	198.0	4.2	97	352.5	334.0	7.4	97	594.1	6.0	.7	88	9.642
JUL	1751.700	56.500	70.400	125.500	148.1	3.0	97	254.1	247.2	8.0	96	419.0	6.4	.6	90	10.160
AUG	1805.800	58.252	70.300	95.500	206.0	3.0	98	366.5	393.0	4.8	98	701.0	13.7	.6	95	23.656
SEP	1752.000	58.400	75.500	95.500	225.0	5.4	97	384.7	233.0	12.2	94	386.8	9.6	1.1	88	15.013
OCT	1435.600	46.310	53.900	80.900	231.6	5.2	97	325.0	507.9	9.7	98	715.2	8.9	1.2	86	11.054
NOV	1159.700	38.657	53.500	74.600	206.7	6.5	96	232.1	630.5	8.9	98	720.8	8.9	1.6	82	8.466
DEC	1255.700	40.510	58.200	100.000	192.0	3.7	98	236.4	464.0	7.1	98	573.7	11.6	.8	93	13.562
TOTAL	20593.400							4779.4				6920.4				150.157
AVERAGE		56.269			[illegible]	4.7	97		358.1	9.5	97		8.5	1.0	87	
MAXIMUM			134.100	236.400												
NO. OF SAMPLES					154	197			154	197			136	169		

DESIGN DATA - METRIC

PORT McNICOLL

PROJECT Village of Port McNicoll WPCP

PROJECT NO. 1-0091-67

TREATMENT Contact Stabilization

DESIGN FLOW 1.05 $10^3m^3/d$

BOD - Raw Sewage - 170 mg/l

SS - Raw Sewage - 200 mg/l

PRETREATMENT

RAW SEWAGE PUMPS
Two, Type: PACIFIC
Size: each 21.2 l/s

GRIT CHAMBERS
Two, each 3.7m x .3m x .38m swd
Volume: (each) $.43m^3$ Detention: 0.6 min.

BIOLOGICAL TREATMENT

CLARIFIER
Size 8.8m dia. x 3.7m swd
Detention: 5.2 hr.
Overflow Rate: 17.01 m^3/m^2-d
Volume: $229.6m^3$

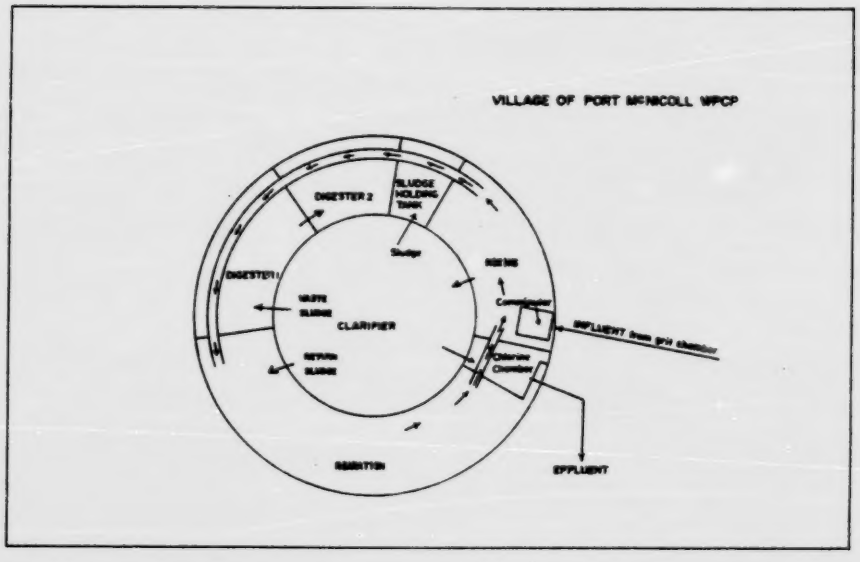
AERATION TANK
Volume: $399.14 m^3$
Detention: 9.2 hr.
Blowers: Three CORD CA-59
Size: 250.7 at 103.4 kPa

AEROBIC DIGESTER 1
Volume: $118.2 m^3$

AEROBIC DIGESTER 2
Volume: $77.28 m^3$

CHLORINE CHAMBER
Volume: $30.69 m^3$
Detention: 42 min.

SLUDGE HOLDING TANK
Volume: $40.91 m^3$



DESIGN DATA - IMPERIAL

PROJECT Village of Port McNicoll WPCP

PROJECT NO. 1-0091-67

TREATMENT Contact Stabilization

DESIGN FLOW 0.23 MGD

BOD - Raw Sewage - 170 mg/l

SS - Raw Sewage - 200 mg/l

PRETREATMENT

RAW SEWAGE PUMPS
Two, Type: PACIFIC
Size: each 280 igpm

GRIT CHANNELS
Two, each 12' x 1' x 1.25 swd
Volume: (each) 94 gal. Detention: 0.6 min.

BIOLOGICAL TREATMENT

CLARIFIER
29' dia. x 12.25' swd
Volume: 80,500 I. Gal.
Detention: 5.2 hr.
Overflow Rate: 348 I. Gal. /ft^2/day

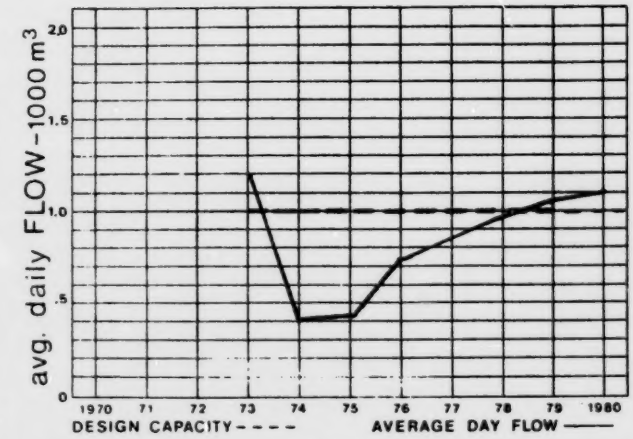
AERATION TANK
Volume: 87,800 I. Gal.
Detention: 9.2 hr.
Blowers: Three CORD CA-59
Size: 600 cfm at 15 psi

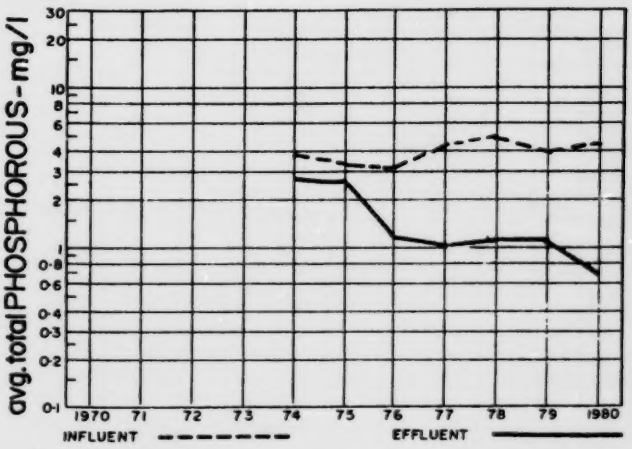
AEROBIC DIGESTER 1
Volume: 26,000 I. Gal.

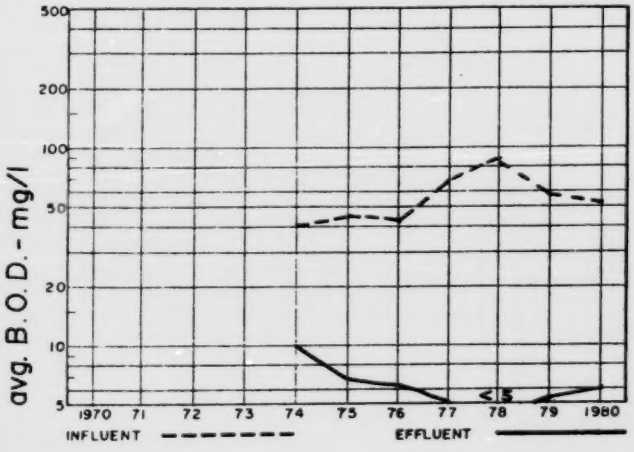
AEROBIC DIGESTER 2
Volume: 17,000 I. Gal.

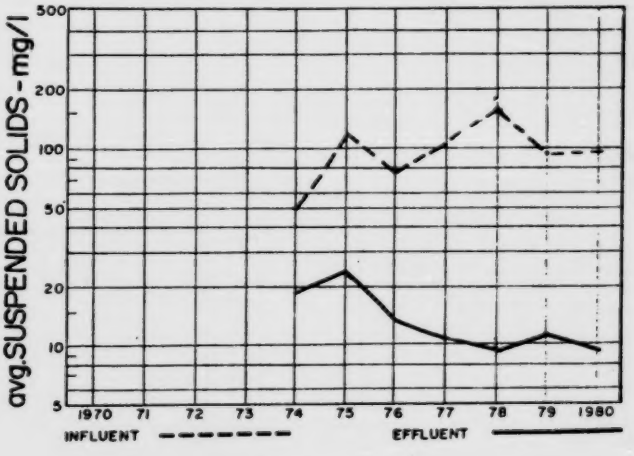
CHLORINE CHAMBER
Volume: 6750 I. Gal.
Detention: 42 min.

SLUDGE HOLDING TANK
Volume: 9,000 I. Gal.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001417 PORT MC NICOLL MPCP

MUNICIPALITY : PORT MCNICOLL
REGION : 03 CENTRAL

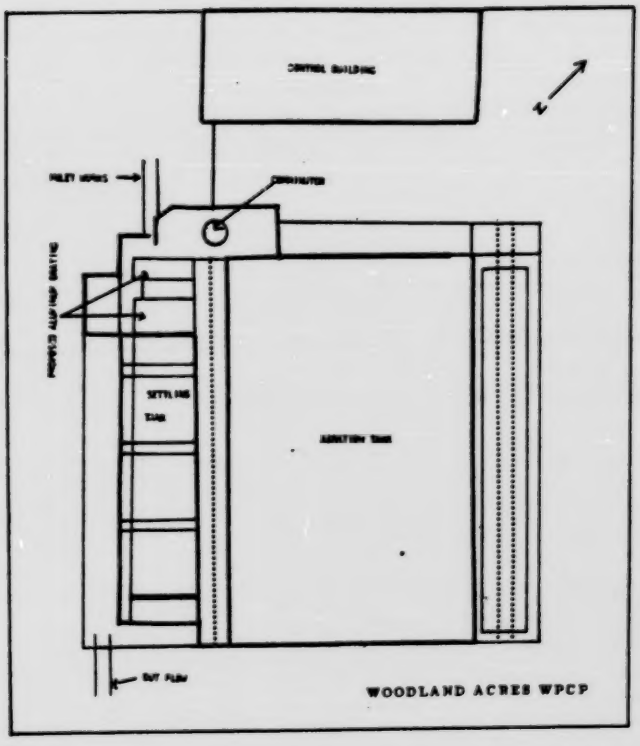
TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,956
POPULATION SERVED : 1,100
PERCENT SERVED : 56.2

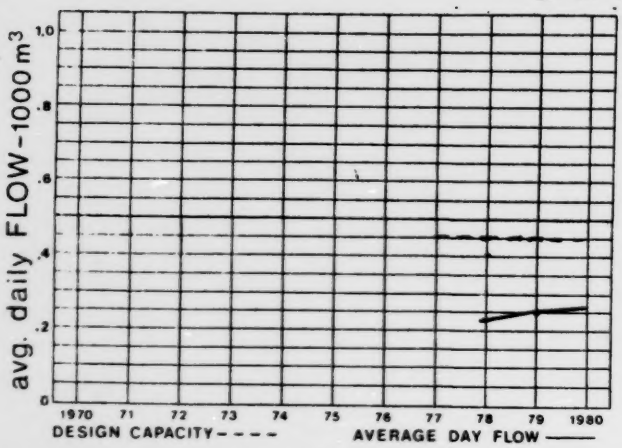
OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

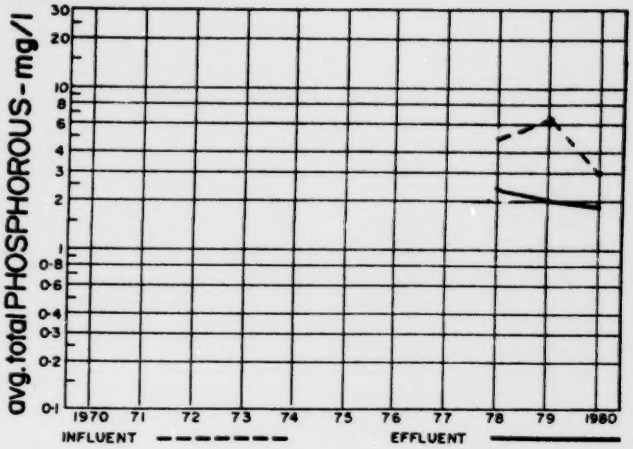
DESIGN CAPACITY : 1.045 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

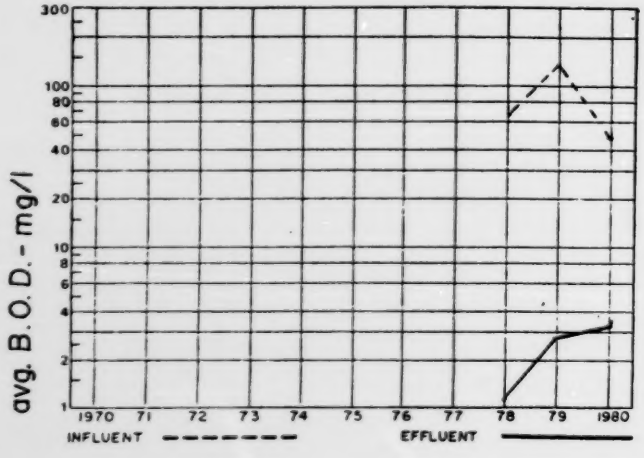
	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	33.840	1.091	1.501		27.0	7.0	74	.6	65.0	9.0	86	1.8	3.4	.9	73	.085
FEB	25.400	.876	1.363		100.0	12.0	88	2.2	140.0	10.0	92	3.3	9.7	.9	90	.223
MAR	31.780	1.025	1.850		68.0	8.0	88	1.9	130.0	13.0	90	3.7	6.3	1.1	82	.165
APR	47.400	1.580	2.100		56.0	12.0	78	2.0	100.0	20.0	80	3.7	2.7	.7	71	.091
MAY	33.150	1.069	1.559		37.0	3.0	91	1.1	65.0	10.0	84	1.8	4.2	.5	86	.120
JUN	38.730	1.291	1.679		44.0	2.0	95	1.6	75.0	11.0	85	2.4	3.2	.7	75	.094
JUL	36.800	1.187	1.801		46.0	9.0	80	1.3	85.0	6.0	92	2.9	2.5	.4	80	.074
AUG	31.580	1.018	1.481		26.0	.6	97	.8	50.0	5.0	90	1.4	2.3	.4	79	.057
SEP	28.240	.941	1.198		72.0	3.0	95	1.9	145.0	6.0	95	3.9	4.7	.7	84	.112
OCT	35.300	1.175	1.916		56.0	1.6	97	1.9	85.0	9.0	89	2.6	8.4	.5	93	.278
NOV	34.260	1.142	1.387		56.0	4.0	92	1.7	85.0	.1	99	2.9	2.8	.6	77	.075
DEC	41.200	1.329	2.255		58.0	10.0	82	1.9	90.0	15.0	83	3.0	2.9	.6	76	.091
TOTAL	417.680							19.4				33.9				1.465
AVERAGE		1.144			53.8	6.0	88		92.9	9.5	89		4.4	.7	83	
MAXIMUN			2.255													
NO. OF SAMPLES					12	12			12	12			12	12		

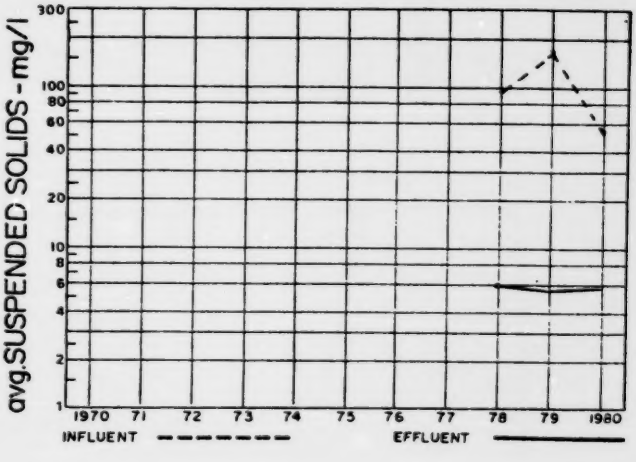

CONTROL BUILDING
INLET WORKS
CHLORINATOR
PRIMARY SLUDGE PUMP STATION
SETTLING TANK
AERATION TANK
OUT FLOW
WOODLAND ACRES WPCP

SMITH (WOODLAND ACRES)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002381 WOODLAND ACRES MPCP

MUNICIPALITY : SMITH TOWNSHIP
REGION : 03 CENTRAL

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 7,675
POPULATION SERVED : 4,200
PERCENT SERVED : 54.7

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	7.344	.240	.280		27.0	2.5	90	.1	45.0	5.0	88	.2	3.2	1.8	43	.010
FEB	4.354	.150	.173		60.0	4.0	93	.2	55.0	5.0	90	.2	7.2	2.7	62	.020
MAR	15.958	.510	8.092		56.0	2.0	96	.8	78.0	5.0	93	1.1	2.3	3.0	-	-
APR	12.365	.410	.971		12.0	4.5	62		11.0	6.5	40		.5	1.0	-	-
MAY	7.601	.250	.356		21.5	2.5	88	.1	27.5	5.0	81	.1	.8	1.5	-	-
JUN	6.696	.223	.300		40.0	*			35.0	*			1.4	*		
JUL	8.119	.260	.599		49.0	.3	99	.3	58.0	.5	99	.4	3.3	2.0	39	.011
AUG	5.939	.192	.286		34.0	.4	98	.2	52.0	5.0	90	.2	3.5	1.7	51	.011
SEP	5.277	.175	.232		54.0	1.4	97	.2	67.0	5.0	92	.3	3.7	2.0	45	.009
OCT	5.763	.190	.322		102.0	13.0	87	.5	82.0	10.0	87	.4	4.2	2.4	42	.010
NOV	6.860	.229	.276		45.0	1.5	96	.2	57.5	5.0	91	.3	2.1	1.7	19	.003
DEC	8.980	.289	.475		72.0	3.5	95	.6	92.0	13.0	85	.7	4.0	2.0	50	.018
TOTAL	95.256							3.8				4.4				.092
AVERAGE		.260			47.7	3.2	93		55.0	5.9	89		3.0	1.9	34	
MAXIMUM			8.092													
NO. OF SAMPLES					21	20			21	20			21	20		

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Ministry of the Environment
Ontario

Southeastern Region

④

DESIGN DATA - METRIC

BANCROFT

Project: Bancroft WPCP

Project No: 1-0263-71

Treatment: Contact stabilization plant
operated as extended aeration

Design Flow: Contact stabilization 1.8 $10^3 m^3/d$
* Extended aeration 1.2 $10^3 m^3/d$
BOD - Raw Sewage - 200 mg/l

Pumping Stations

P.S. No.1
Type: Two, SMART TURNER Submersible
Size: each 18.9 l/s

P.S. No. 2
Type: Two, submersible
Size: each 6.4 l/s

P.S. No. 3
Type: Two, submersible
Size: each 6.4 l/s

P.S. No. 4
Size: Two, each 37.9 l/s @ 16.2m TDH

At-Plant P.S.
Type: Two, SPAANS screw pumps.
Size: each 83.3 l/s @ 5.8m TDH

Grit Channels
Type: Two, rectangular
Size: each 7.3m x .61m x .46m swl
($2.0m^3$)
*Retention: each 2.5 min.

Comminutor
Type: one, CORD 3.41m

Biological Treatment

Aeration Cell No. 1
(Future re-aeration)
Volume: $406.5m^3$
*Retention: 9.4 hr

Aeration Cell No. 2
(Future aerobic digester No. 1)
Volume: $215.5m^3$
*Retention: 4.4 hr

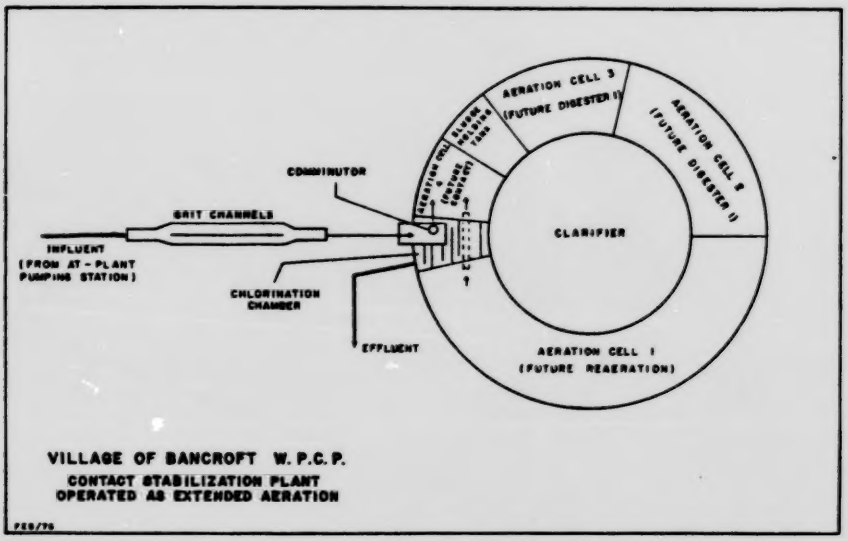
Aeration Cell No. 3
(Future aerobic digester No. 2)
Volume: $137.7m^3$
*Retention: 2.8 hr

Aeration Cell No. 4
(Future contact)
Volume: $74.6m^3$
*Retention: 1.5 hr

Chlorination Chamber
Volume: $50.0 m^3$
*Retention: 1.0 hr

Chlorinator
Type: F and P 70C344
Size: 113.4 kg/day

Clarifier:
Size: 15.2m dia. x 2.5m swd
Volume: $456.9m^3$
*Retention: 9.3 hr
Loading
*Surface: $6.5m^3/m^2 \cdot d$
*Weir: $24.6m^3/m \cdot d$



VILLAGE OF BANCROFT W.P.C.P.
CONTACT STABILIZATION PLANT
OPERATED AS EXTENDED AERATION

FEB/76

DESIGN DATA - IMPERIAL

Project: Bancroft WPCP

Project No: 1-0263-71

Treatment: Contact stabilization plant
operated as extended aeration

Design Flow: Contact stabilization 0.4 M.I.G.D.
* Extended aeration 0.26 M.I.G.D.
BOD - Raw Sewage - 200 mg/l

Pumping Stations

P.S. No.1
Type: Two, SMART TURNER Submersible
Size: each 250 I.G.P.M.

P.S. No.2
Type: Two, submersible
Size: each 85 I.G.P.M.

P.S. No.3
Type: Two, submersible
Size: each 85 I.G.P.M.

P.S. No.4
Size: Two, each 500 I.G.P.M. @ 52.5' TDH

At-Plant P.S.
Type: Two, SPAANS screw pumps.
Size: each 1100 I.G.P.M. @ 19' TDH

Grit Channels
Type: Two, rectangular
Size: each 24' x 2' x 1.5' swl
(450 I.G.)
*Retention: each 2.5 min.

Comminutor
Type: one, CORD 16-inch

Biological Treatment

Aeration Cell No.1
(Future re-aeration)
Volume: 101,300 I.G.
*Retention: 9.4 hr

Aeration Cell No.2
(Future aerobic digester No.1)
Volume: 47,400 I.G.
*Retention: 4.4 hr

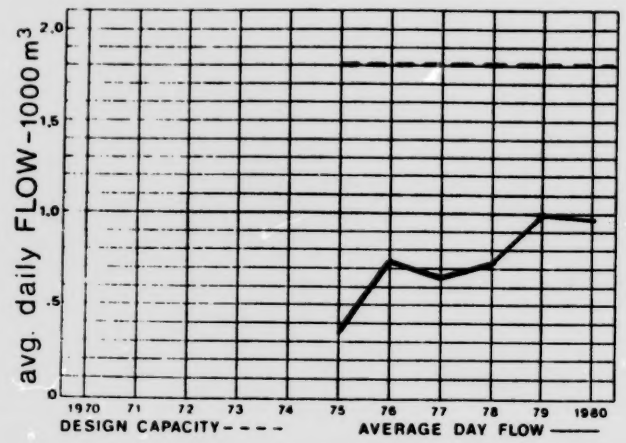
Aeration Cell No.3
(Future aerobic digester No.2)
Volume: 30,300 I.G.
*Retention: 2.8 hr

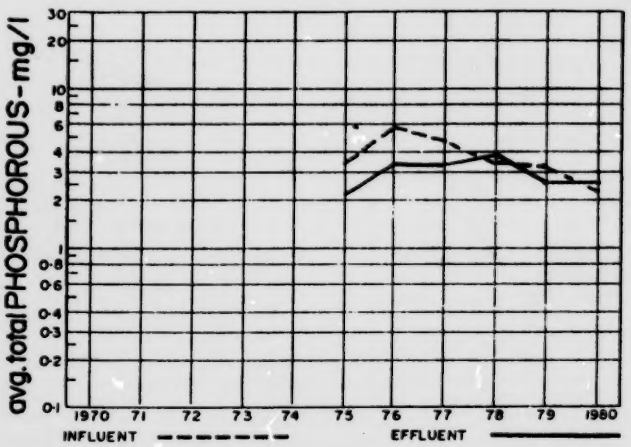
Aeration Cell No.4
(Future contact)
Volume: 16,400 I.G.
*Retention: 1.5 hr

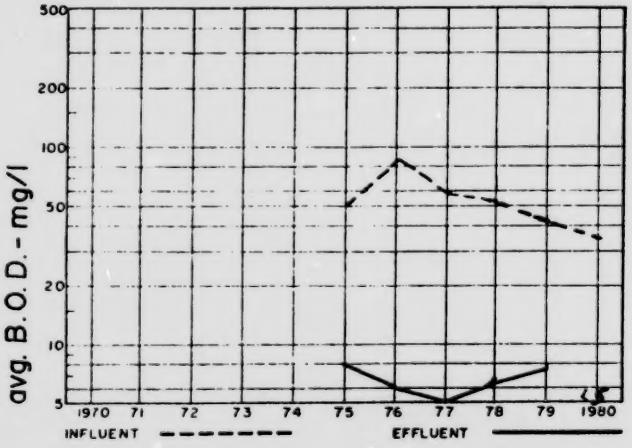
Chlorination Chamber
Volume: 11,000 I.G.
*Retention: 1.0 hr

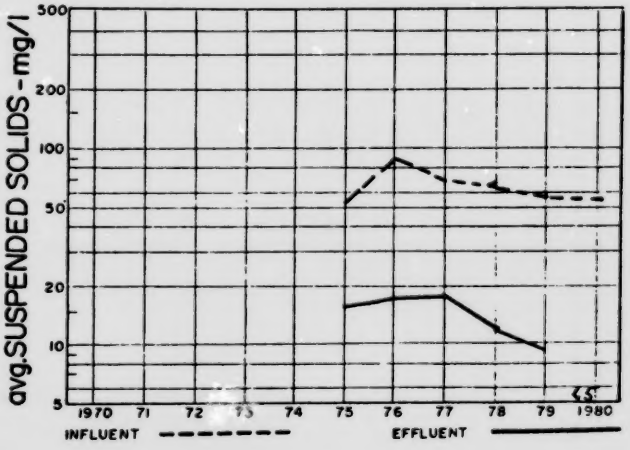
Chlorinator
Type: F and P 70C344
Size: 250 lb/day

Clarifier:
Size: 50' dia. x 8.2' swd
Volume: 100,500 I.G.
*Retention: 9.3 hr
Loading:
* Surface: 132 I.G./ft^2/day
* Weir: 1655 I.G./ft/day









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 1100001239 BANCROFT MPCP

MUNICIPALITY : BANCROFT
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 2,346
POPULATION SERVED : 2,000
PERCENT SERVED : 85.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.818 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	31.294	1.009	1.210	3.264	25.0	3.5	86	.6	43.0	5.0	88	1.1	2.7	2.5	7	.006
FEB	26.148	.901	.954	1.776	81.5	2.8	96	2.0	64.0	3.3	94	1.5	4.0	3.0	24	.026
MAR	30.961	.998	1.780	3.100	34.5	6.0	82	.8	80.5	10.0	87	2.1	2.3	2.7	-	-
APR	35.677	1.189	1.458	2.200	17.0	2.0	88	.5	38.0	5.0	86	1.1	2.2	2.0	11	.009
MAY	33.569	1.082	1.170	2.400	44.5	1.6	96	1.4	56.0	2.2	96	1.8	3.0	2.6	13	.013
JUN	30.645	1.021	1.074	2.350	18.0	1.5	91	.5	45.0	1.6	96	1.3	1.6	2.5	-	-
JUL	30.929	.998	1.226	2.450	30.5	1.5	95	.8	51.8	5.8	88	1.4	2.0	3.0	-	-
AUG	29.496	.951	1.049	2.125	38.0	2.0	94	1.0	57.0	5.0	91	1.5	3.1	3.1		
SEP	26.687	.889	.918	1.750	25.0	1.5	94	.6	63.0	3.0	95	1.6	3.0	3.6	-	-
OCT	28.590	.922	.998	2.300	25.0	1.5	94	.6	51.4	3.0	94	1.3	1.7	3.1	-	-
NOV	27.882	.929	.989	1.800	52.5	2.0	96	1.4	59.3	3.2	94	1.5	3.6	3.2	11	.011
DEC	29.081	.938	1.045	1.950	51.5	2.5	95	1.4	67.8	2.5	96	1.8	4.1	2.7	32	.039
TOTAL	360.959							12.1				18.6				.104
AVERAGE		.986			36.9	2.3	93		56.4	4.1	92		2.7	2.8	-	
MAXIMUM			1.780	3.264												
NO. OF SAMPLES					34	24			71	81			42	22		

DESIGN DATA - METRIC

PROJECT: Village of Barry's Bay

PROJECT NO: 1-0126-67

TREATMENT: Extended aeration with phosphorus removal

DESIGN POPULATION: 2318

DESIGN FLOW: 1.2 $10^3 m^3/d$

BOD: - 220 mg/l

PUMPING STATIONS

No. 1 3 pumps 30.3 l/s @ 9.1 m hd. and 3.7 kW
No. 2 2 pumps 15.9 l/s @ 14.0 m hd. and 7.0 kW
No. 3 2 pumps 6.8 l/s @ 12.5 m hd. and 3.2 kW

BARRY'S BAY

PRETREATMENT

Grit Removal
Twin Channel Bar Screen
Comminutor - 0.56 kW motor

SECONDARY TREATMENT

Aeration Tank

Volume: 1.0 $10^3 m^3$
Loading: .02 kg BOD/m^3

Secondary Sedimentation

Loading, surface: 48.9 $m^3/m^2 \cdot d$
Surface Area: 332.8 m

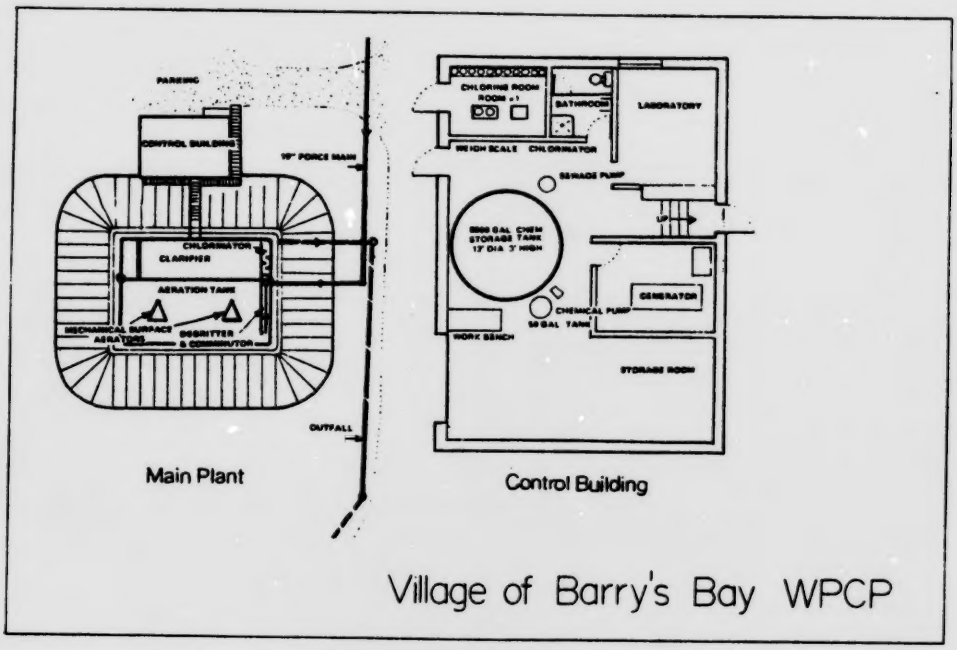
SLUDGE HANDLING

Holding Tank Volume: 77.1 m^3
Air Supply: 292.5 l/s

CHLORINATION

Chlorine Contact Chamber

Volume: 25.8 m^3
Retention: 30 min.



DESIGN DATA - IMPERIAL

PROJECT Village of Barry's Bay

PROJECT NO. 1-0126-67

TREATMENT Extended aeration with phosphorous removal

DESIGN POPULATION 2318

DESIGN FLOW 0.273 mgd

BOD - 220 mg/l

PUMPING STATIONS

No.1 3 pumps 400 gpm @ 30'hd. and 5 hp.
No.2 2 pumps 210 gpm @ 46'hd. and 9.4 hp.
No.3 2 pumps 90 gpm @ 41'hd. and 5 hp.

PRETREATMENT

Grit Removal
Twin Channel Bar Screen
Comminutor - 3/4 hp. motor

SECONDARY TREATMENT

Aeration Tank

Volume: 0.22 mgall.
Loading: 13 lb. BOD/day/1000 $ft.^3$

Secondary Sedimentation

Loading, surface: 1000 Igall/day/$ft.^2$
Surface Area: 1092 $ft.^2$

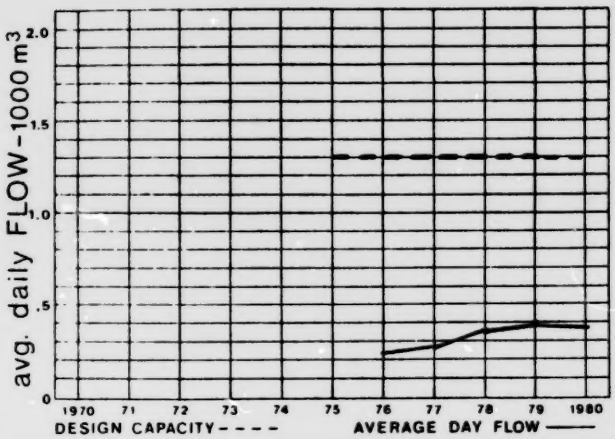
SLUDGE HANDLING

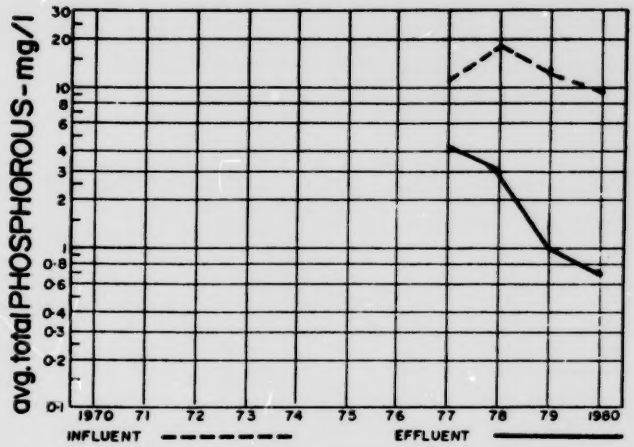
Holding Tank Volume: 2724 $ft.^3$
Air Supply: 700 cfm

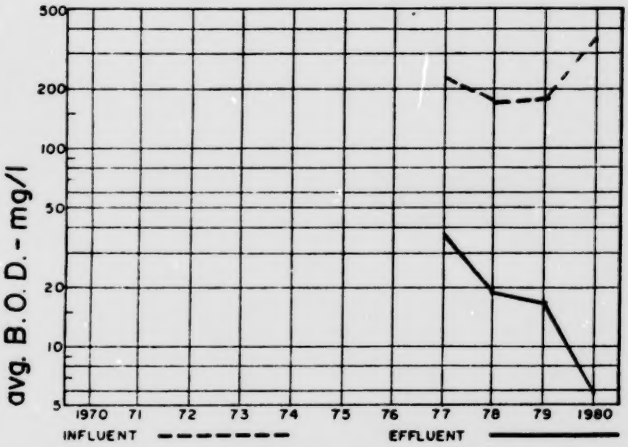
CHLORINATION

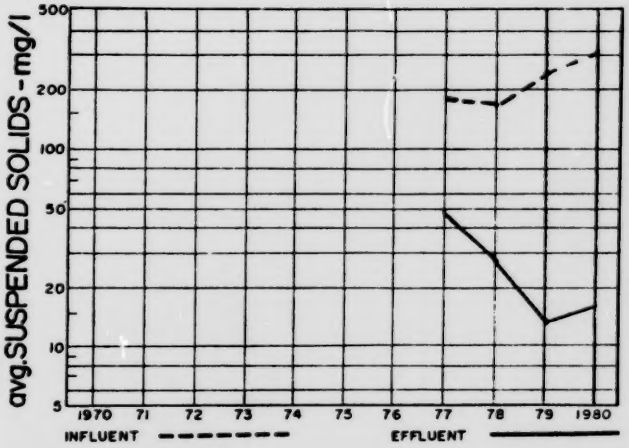
Chlorine Contact Chamber

Volume: 5685 gal.
Retention: 30 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001854 BARRY'S BAY MPCP

MUNICIPALITY : BARRY'S BAY
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,310
POPULATION SERVED : 1,400
PERCENT SERVED : 106.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.241 1000 M3 DESIGN BOD5 : 220.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	12.911	.416	.500	.007	735.0	7.5	98	9.3	212.0	15.6	92	2.5	5.7	.8	85	.063
FEB	13.092	.451	.546	.008	270.0	26.5	90	3.1	211.5	26.8	87	2.4	7.1	1.2	83	.077
MAR	16.988	.548	.727	.008	190.0	6.0	96	3.1	238.0	21.0	91	3.6	6.8	1.0	85	.099
APR	12.214	.394	.500	.008	415.0	4.5	98	5.0	265.0	14.0	94	3.0	8.4	.6	92	.095
MAY	15.404	.497	.545	.008	420.0	5.5	98	6.3	570.0	12.0	97	8.5	13.4	.4	96	.199
JUN	13.620	.454	.500	.008	507.0	5.0	99	6.8	419.0	40.0	90	5.1	8.8	.9	88	.107
JUL	15.046	.485	.627	.050	437.0	2.0	99	6.5	318.0	18.0	94	4.5	11.0	.9	91	.152
AUG	14.439	.467	.528	.008	240.0	2.5	98	3.4	222.0	6.4	97	3.1	8.4	.7	91	.111
SEP	11.922	.397	.485	.001	337.0	3.5	98	3.9	282.0	14.5	94	3.1	9.5	.5	94	.107
OCT	11.472	.370	.416	.001	177.5	2.7	98	2.0	215.2	14.0	93	2.3	9.7	.7	92	.103
NOV	13.580	.453	.417	.001	320.0	2.5	99	4.3	348.0	9.0	97	4.6	12.2	.6	95	.158
DEC	12.445	.401	.440	.600	448.0	3.0	99	5.5	465.0	10.0	97	5.6	14.2	.6	95	.169
TOTAL	163.133							59.7				48.8				1.440
AVERAGE		.444			374.7	5.9	98		313.8	16.7	94		9.6	.7	92	
MAXIMUM			.727	.600												
NO. OF SAMPLES					23	25			107	107			72	72		

DESIGN DATA - METRIC

CHALK RIVER

PROJECT: Village of Chalk River WPCP

PROJECT NO: 1-0149-68

TREATMENT: Contact Stabilization
operated as Extended Aeration

DESIGN FLOW: 0.36 $10^3 m^3/d$ Extended Aeration
0.55 $10^3 m^3/d$ Contact Stabilization

BOD - Removal - 90%

SS - Removal - 90%

MAIN AND RAILWAY STS. P.S.

Pumps: Two each 18.2 L/S

GRIT CHAMBERS

Size: Two, each .76m x 6.1 m x .23 m awd
(1.04 m^3. each)
Retention: (each) 0.4 min

BIOLOGICAL TREATMENT

AERATION TANK "A"

(Future Aerobic Digester)
Capacity: 98.6 m^3.
Retention: 0.65 hr

AERATION TANK "B"
(Future Re-aeration tank)
Capacity: 192.3 m^3
Retention: 1.27 hr.

AERATION TANK "C"

(Future Mixing Tank)
Capacity: 75.0 m^3
Retention: 0.49 hr

BLOWERS:
Type: Two, Roots, RAI 812
Size: 18.6 kW

SETTLING TANK

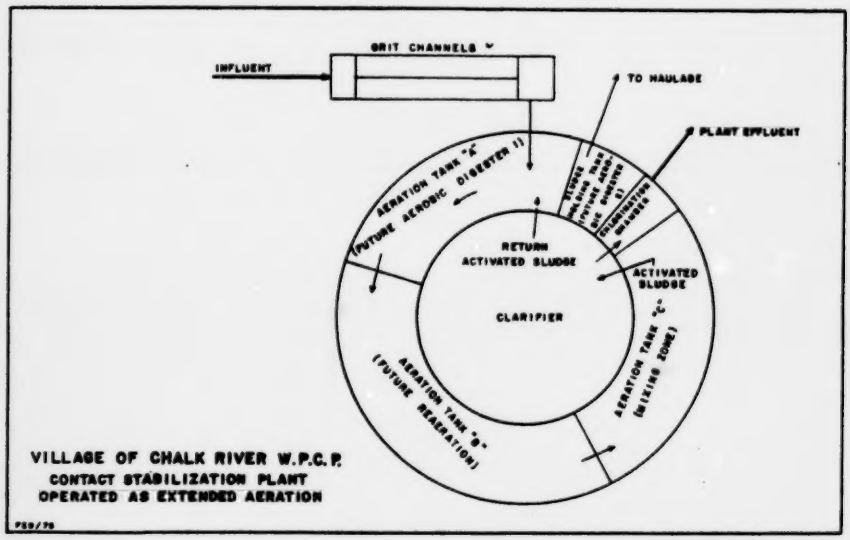
Size: 14.6 m o.d. x 3.1 m awd
Capacity: 240.5 m^3
Retention: 1.6 hr
Loading:
- Surface 2.3 $m^3/m^2 \cdot d$
- Weir 8.2 $m^3/m \cdot d$

SLUDGE HOLDING TANK

(Future Aerobic Digester 2)
Capacity: 28.2 m^3

PLANT P.S.

Pumps: Two, each 22.7 L/S



DESIGN DATA - IMPERIAL

PROJECT: Village of Chalk River WPCP

PROJECT NO: 1-0149-68

TREATMENT: Contact Stabilization
operated as Extended Aeration

DESIGN FLOW: .08 mgd Extended Aeration
0.12 mgd Contact Stabilization

BOD - Removal - 90%

SS - Removal - 90%

MAIN AND RAILWAY STS. P.S
Pumps: Two, each 340 gpm

GRIT CHAMBERS
Size: Two, each 2.5' x 20' x .75' awd
(230 I.G. each)
Retention: (each) 0.4 min

BIOLOGICAL TREATMENT

AERATION TANK "A"
(Future Aerobic Digester)
Capacity: 21,700 I.G.
Retention: 0.65 hr

AERATION TANK "B"
(Future Re-aeration tank)
Capacity: 42,300 I.G.
Retention: 1.27 hr.

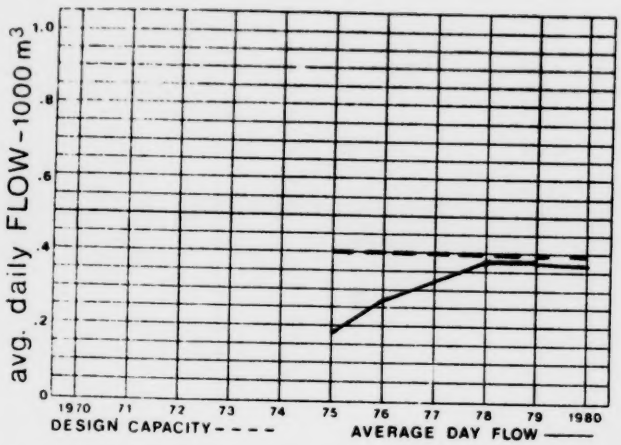
AERATION TANK "C"
(Future Mixing Tank)
Capacity: 16,500 I.G.
Retention: 0.49 hr

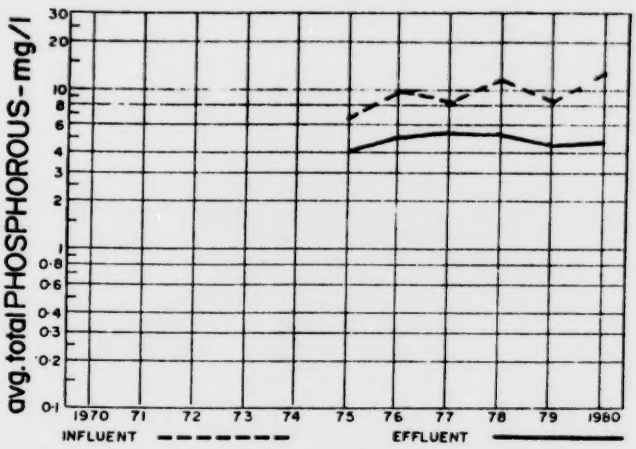
BLOWERS
Type: Two, Roots, RAI 812
Size: 25 HP

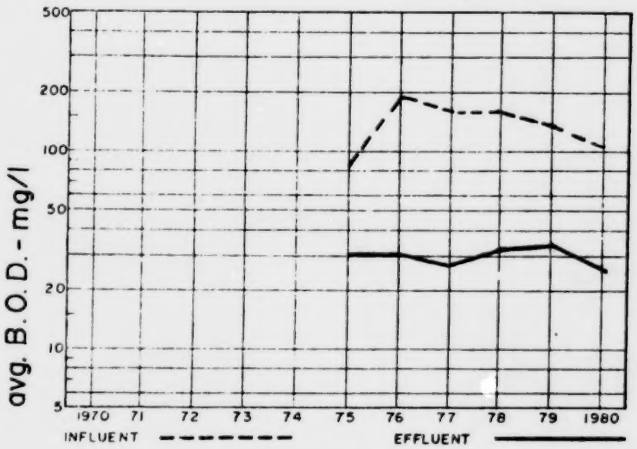
SETTLING TANK
Size: 48' o.d. x 10.2 awd
Capacity: 52,900 I.G.
Retention: 1.6 hr
Loading:
- Surface 47 I.G/ft2/day
- Weir 548 IG/ft/day

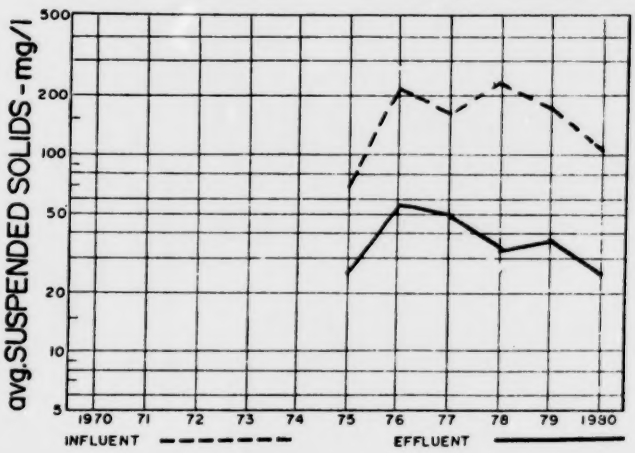
SLUDGE HOLDING TANK
(Future Aerobic Digester 2)
Capacity: 6200 I.G.

PLANT P.S.
Pumps: Two, each 300 gpm









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001587 CHALK RIVER MPCP

MUNICIPALITY : CHALK RIVER
REGION : 04 SOUTHEASTERN

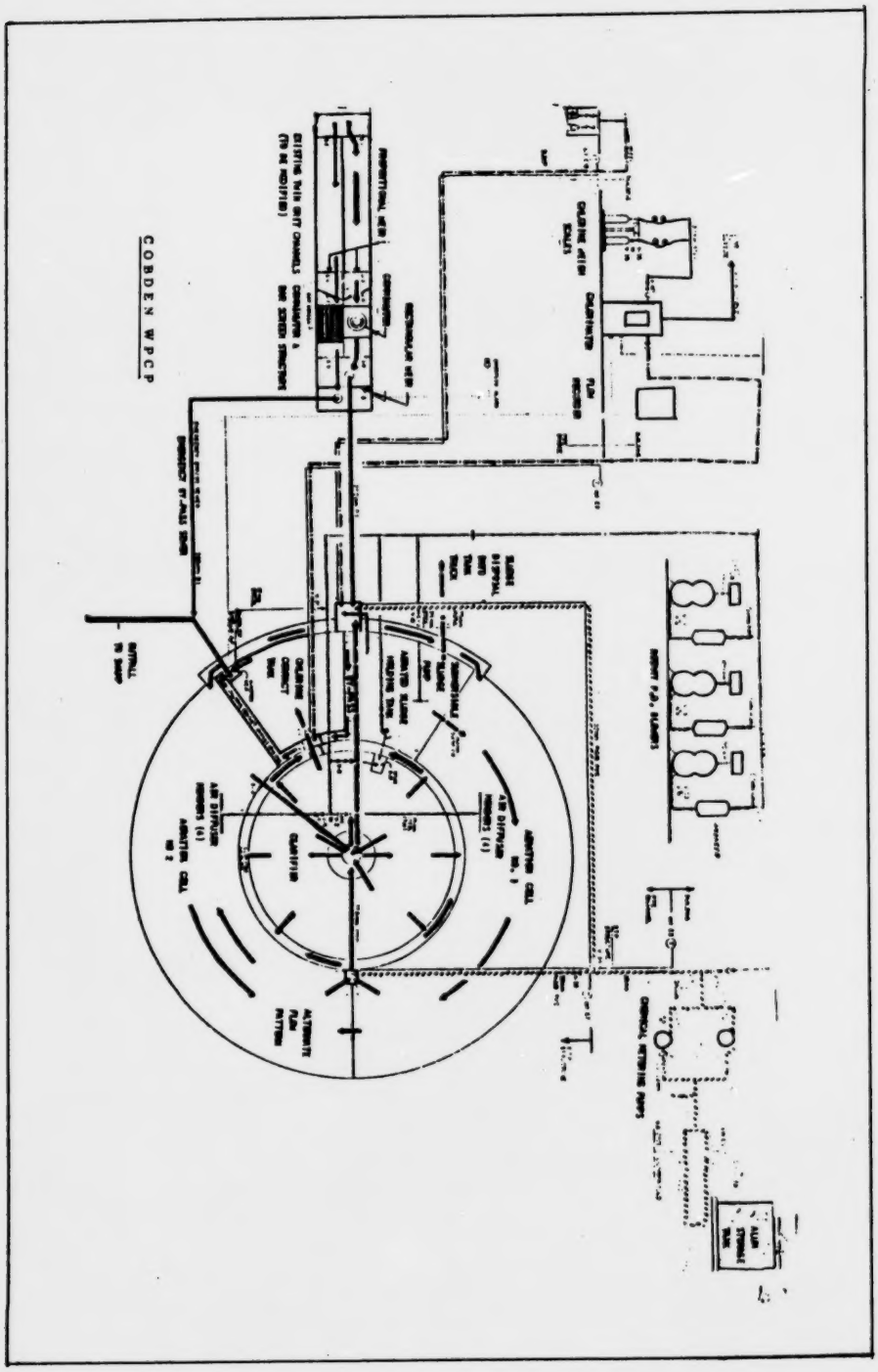
TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
CONVERT TO OTHER OPERATING MODE

CURRENT POPULATION : 1,022
POPULATION SERVED : 1,001
PERCENT SERVED : 97.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.363 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	10.854	.350	.384		119.0	34.0	71	.9	92.8	52.2	43	.4	7.8	4.9	36	.031
FEB	10.330	.356	.389		163.5	30.0	81	1.3	112.0	56.0	50	.5	8.5	5.6	34	.030
MAR	12.720	.410	.690		89.0	25.0	71	.8	168.0	63.0	62	1.3	6.9	6.1	11	.010
APR	12.080	.402	.470		143.5	38.5	73	1.2	105.0	19.5	81	1.0	6.6	4.4	32	.026
MAY	12.450	.401	.480		112.0	46.0	58	.8	128.0	19.0	85	1.3	6.5	4.8	26	.021
JUN	11.023	.408	.400		108.0	45.0	58	.6	98.0	14.6	85	.9	74.0	3.8	94	.774
JUL	11.790	.380	.490		133.0	18.0	86	1.3	113.5	6.5	94	1.2	6.5	7.2	-	-
AUG	12.490	.403	.512		90.0	8.0	91	1.0	97.5	6.0	93	1.1	6.7	4.6	31	.027
SEP	12.540	.418	.495		88.0	14.0	84	.9	150.0	6.0	96	1.8	6.6	2.9	56	.046
OCT	13.520	.436	.517		112.0	6.0	94	1.4	85.0	7.0	91	1.0	11.0	3.6	67	.100
NOV	11.604	.387	.462		95.0	29.5	68	.7	135.0	29.0	78	1.2	7.9	5.6	28	.026
DEC	11.329	.365	.407		80.0	38.0	52	.4	137.5	40.8	70	1.0	5.7	4.0	29	.019
TOTAL	142.730							11.8				13.2				1.110
AVERAGE		.393			111.0	27.6	75		118.5	26.6	77		12.8	4.8	62	
MAXIMUM			.690													
NO. OF SAMPLES					21	22			41	42			29	28		


COBDEN WPCP

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120000596

MUNICIPALITY : COBDEN
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

SWITCH FROM PRIMARY TREATMENT PLANT IN 1980

CURRENT POPULATION : 1,050
POPULATION SERVED : 1,480
PERCENT SERVED : 140.9

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN																
FEB																
MAR																
APR																
MAY																
JUN																
JUL																
AUG	7.573	.244	.330		115.0	1.5	98	.8	115.0	6.5	94	.8	5.6	2.8	50	.021
SEP	7.573	.244	.330		104.5	1.1	98	.7	87.5	9.5	89	.5	6.4	3.6	42	.021
OCT	15.564	.519	.871		54.0	1.6	97	.8	62.5	12.5	80	.7	8.1	.6	91	.116
NOV	14.868	.495	.546		67.0	2.0	97	.9	92.5	12.5	86	1.1	4.8	.7	85	.062
DEC	15.865	.511	.875		81.5	3.0	96	1.2	90.0	14.5	83	1.1	5.5	1.0	80	.071
TOTAL	61.443							4.6				4.5				.291
AVERAGE		.402			84.4	1.8	97		89.5	11.1	87		6.0	1.7	70	
MAXIMUM			.875													
NO. OF SAMPLES					9	9			9	9			9	9		

DESIGN DATA - METRIC

DESERONTO

PROJECT: Town of Deseronto WPCP

PROJECT NO.: 1-0010-66

DESIGN FLOW: 1.4 $10^3 m^3/d$

BOD: Raw Sewage 197 mg/l
Removal 90%

SS: Raw Sewage 224 mg/l
Population: 2800

PUMPING STATION (at Plant)
2, Raw sewage pumps
Size: 31.5 l/s @ 7.0m TDH

GRIT REMOVAL
Type: 2 manually cleaned channels
Size: .46m x 6.1m x .6m swd
Vomume: 3.6 m^3 Detention: 3.8 min.

COMMINUTION
One, Type: QU250 Design: 52.6 l/s

SCREENING
Bar screen with .6cm bars on 5cm centres

BIOLOGICAL TREATMENT
(Napanee Industries Plant)
(Contact Stabilization Plant converted to Extended Aeration)

AERATION SECTION
Volume: 170.0 m^3

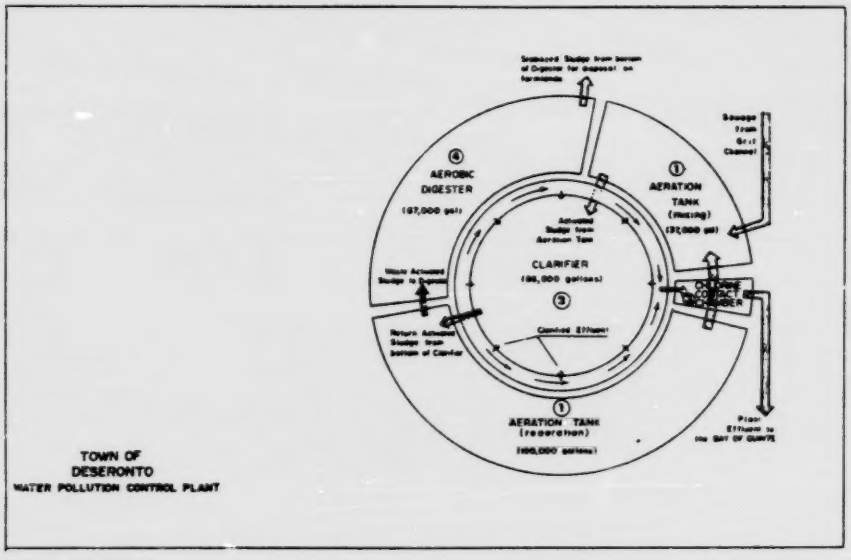
REARATION SECTION
Volume: 453.7 m^3
Detention (as extended aeration plt) 11 hours

AEROBIC DIGESTER
Volume: 306.4 m^3
Airlift - Return sludge: 26.5 l/s
- Waste sludge: 15.9 l/s
Blowers: 3 SUTORBIET
Size: 179.70 l/s @ 55.58 kPa

SEDIMENTATION SECTION
Volume: 392.5 m^3 Detention: 6.9 hours
Surface overflow rate: 16.1 $m^3/m^2.d$

CHLORINE CONTACT CHAMBER
Volume: 26.2 m^3 Detention: 30 min.

OUTFALL
152.4m long - 457.2 mm dia. pipe



DESIGN DATA - IMPERIAL

Project: Town of Deseronto WPCP
Project No: 1-0010-66
Design Flow: 0.3 MGD
BOD: Raw Sewage 197 mg/l
Removal 90%
SS: Raw Sewage 224 mg/l
Population: 2800

PUMPING STATION (at Plant)
2, Raw sewage pumps
Size: 416 IGPM at 23' TDH

GRIT REMOVAL:
Type: 2 manually cleaned channels
Size: 1'6" x 20' x 2' swd
Volume: 786 I. Gal. Detention: 3.8 min.

COMMINUTION:
One, type: QU250 Design: 695 IGPM

SCREENING:
Bar screen with ¼" bars on 2" centres.

BIOLOGICAL TREATMENT
(Napanee Industries Plant)
(Contact Stabilization Plant converted to Extended Aeration)

AERATION SECTION:
Volume: 37,400 I. Gal

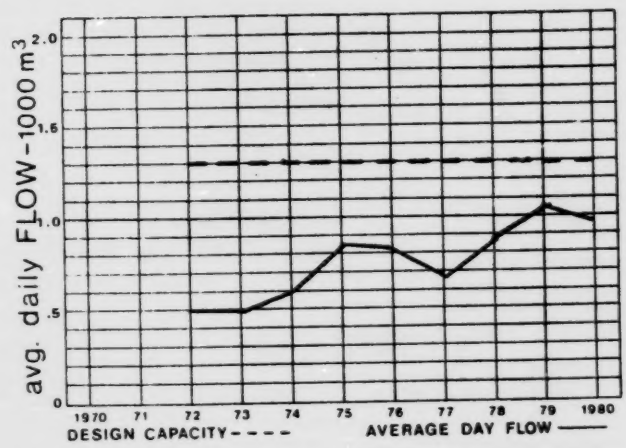
REARATION SECTION:
Volume: 99,800 I. Gal.
Detention (as extended aeration plt) 11 hours

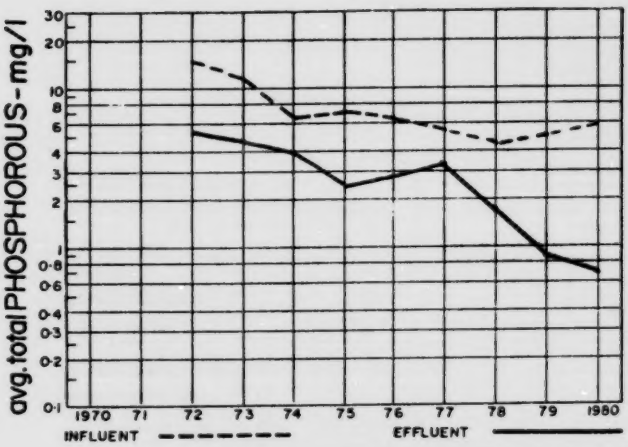
AEROBIC DIGESTER:
Volume: 67,400 I. Gal.
Airlift - Return sludge: 350 IGPM
- Waste sludge: 210 IGPM
Blowers: 3, SUTORBILT
Size: 430 SCFM at 8 psi

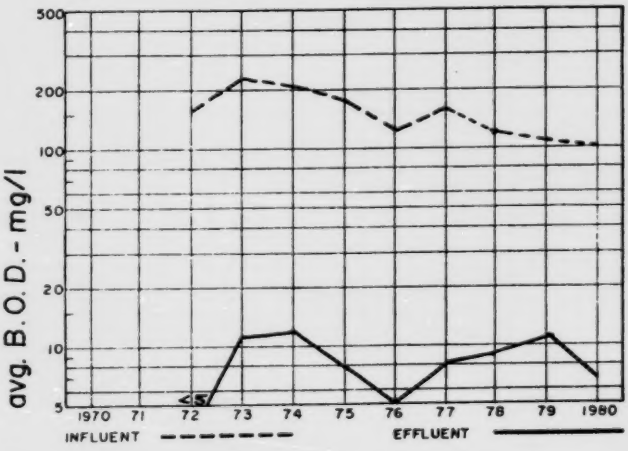
SEDIMENTATION SECTION:
Volume: 86,350 I. Gal. Detention: 6.9 hours
Surface overflow rate: 330 gal/ft^2/day

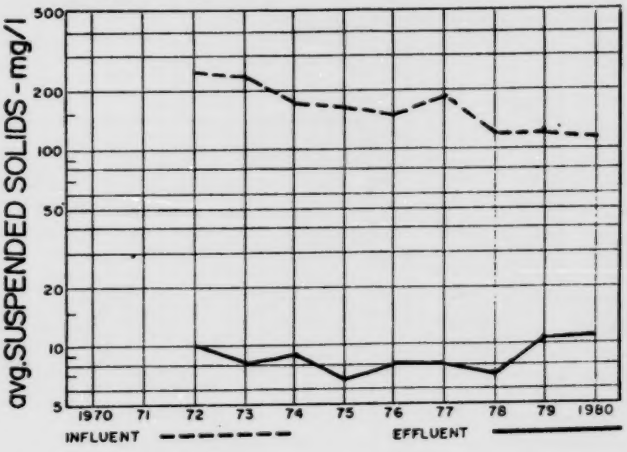
CHLORINE CONTACT CHAMBER:
Volume 6200 I. Gal Detention: 30 min.

OUTFALL
500' 18" dia. pipe









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000980 DESERONTO W P C P

MUNICIPALITY : DESERONTO
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,751
POPULATION SERVED : 2,800
PERCENT SERVED : 159.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.363 1000 M3 DESIGN BOD5 : 197.0 MG/L DESIGN SUSP.SOLIDS : 224.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	36.870	1.190	1.500	1.500	95.0	6.0	93	3.2	126.0	12.0	90	4.2	5.2	.3	94	.181
FEB	22.190	.790	.850	1.500	110.0	13.0	88	2.1	135.0	18.0	86	2.5	6.6	.5	92	.135
MAR	37.890	1.200	1.760	2.509	119.3	8.3	93	4.2	146.3	9.5	93	5.1	6.8	1.4	79	.205
APR	39.700	1.320	2.140	2.140	85.0	9.0	89	3.0	97.0	10.0	89	3.4	4.7	1.2	74	.139
MAY	29.330	.980	1.650	1.650	123.0	9.0	92	3.3	173.0	5.0	97	4.9	7.9	.9	88	.205
JUN	22.260	.742	.830	.830	162.0	23.0	85	3.0	178.0	10.0	94	3.7	7.1	.3	95	.151
JUL	25.510	.820	1.150	1.150	139.0	8.0	94	3.3	180.0	7.0	96	4.4	5.4	.6	88	.122
AUG	18.380	.840	1.220	1.220	34.0	1.0	97	.6	55.0	9.0	83	.8	3.4	.5	83	.052
SEP	26.360	.874	1.210	.400	100.0	2.0	98	2.5	85.0	14.0	83	1.8	6.2	1.3	79	.129
OCT	26.440	.880	1.430	.480	84.0	4.0	95	2.1	80.0	15.0	81	1.7	7.2	.5	93	.177
NOV	27.899	.930	1.080	.480	80.0	2.0	97	2.1	150.0	10.0	93	3.9	7.2	.3	95	.193
DEC	33.715	1.088	2.160	.510	77.7	3.3	95	2.5	82.7	13.7	83	2.3	3.9	.8	79	.105
TOTAL	346.544							32.4				39.1				1.794
AVERAGE		.971			100.7	7.3	92		124.0	11.1	91		5.9	.7	87	
MAXIMUM			2.160	2.509												
NO. OF SAMPLES					35	35			35	35			35	35		

DESIGN DATA - METRIC

EGANVILLE

PROJECT Village of Eganville WPCP
PROJECT NO. 1-0007-66

TREATMENT Extended Aeration

DESIGN FLOW 0.76 $10^3 m^3/d$

BOD - Raw Sewage
- Domestic 182 mg/l
- Creamery 154 mg/l

Removal 80%

PRIMARY TREATMENT

Grit Removal

Type: Parallel channels, manually cleaned
Size: Two 5.3m x .4m

SCREENING

Type: Manually cleaned
Size 3.2cm openings

COMMINUTION

Type: Aero-Flow Type A-12

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air
Size: 379.1 m^3
Retention: 12 hours

Air Supply

Type: Dresser type RAI
Size: Three-142.1 l/s @ 48.3 kPa

SECONDARY SEDIMENTATION

Size: 7.8m dia x 4.6m (170.5m^3)
Retention: 5.3 hours
Loading: Surface 19.0 $m^3/m^2 \cdot d$
Weir: 17.4$m^3/m \cdot d$

CHLORINATION

Type: Wallace & Tiernan Type 831
Size: 9.1 kg/d

Chlorine Contact Chamber

Size: 17.7m^3
Retention: 30 minutes

OUTFALL

- to Bonnechere River

SLUDGE HANDLING

Digestion System

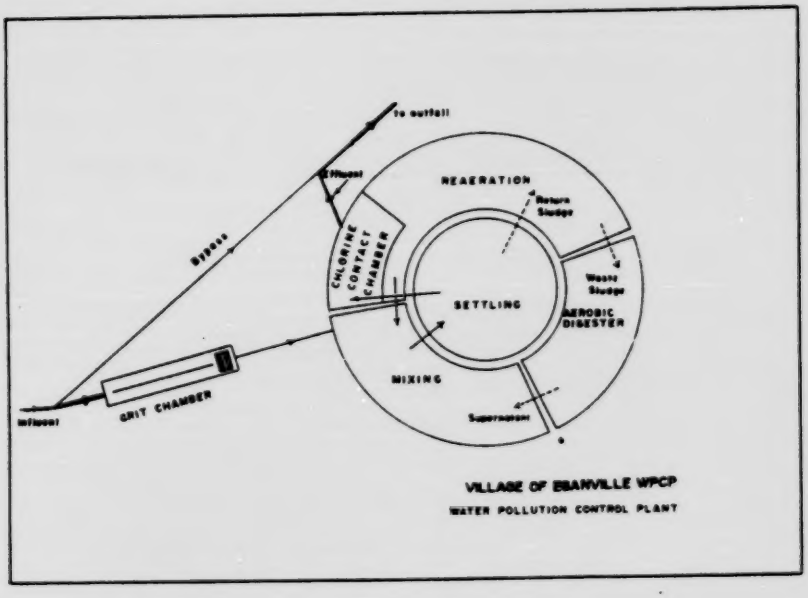
Type: Aerobic
Size: 254.6 m^3

PUMPING STATIONS

North Side
Two Flygt Model CP-3100, 22.1 L/s @ 10.7m TDH

Water Street

Two Flygt Model CP-3100, 9.5 L/s @ 7.6m TDH



DESIGN DATA - IMPERIAL

PROJECT NO. 1-0007-66

TREATMENT Extended Aeration

DESIGN FLOW 0.168 migd

BOD - Raw Sewage
- Domestic 182 mg/l
- Creamery 154 mg/l

Removal 80%

PRIMARY TREATMENT

Grit Removal

Type: Parallel channels, manually cleaned
Size: Two 17'4" x 1'2"

SCREENING

Type: Manually cleaned
Size: 1¼" openings

COMMINUTION

Type: Aero-Flow Type A-13

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air
Size: 83,400 gal
Retention: 12 hours

Air Supply

Type: Dresser type RAI
Size: Three-340 scfm @ 7 psi

SECONDARY SEDIMENTATION

Size: 25'6" dia x 15' (37,500 gal)
Retention: 5.3 hours
Loading: Surface 388 gal/ft²/day
Weir: 1170 gal/ft/day

CHLORINATION

Type: Wallace & Tiernan Type 831
Size: 20 lbs/day

Chlorine Contact Chamber

Size: 3900 gal
Retention: 30 minutes

OUTFALL

- to Bonnechere River

SLUDGE HANDLING

Digestion System

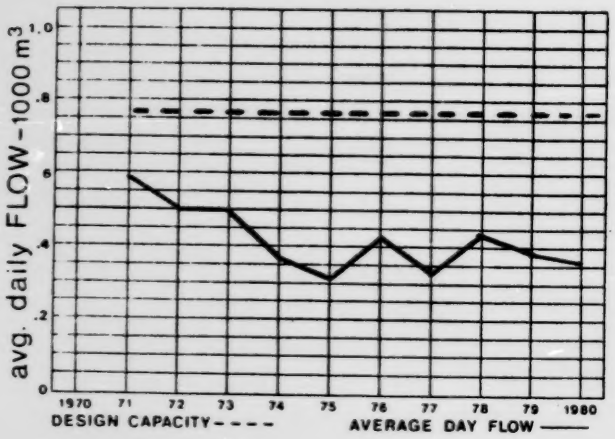
Type: Aerobic
Size: 56,000 gal

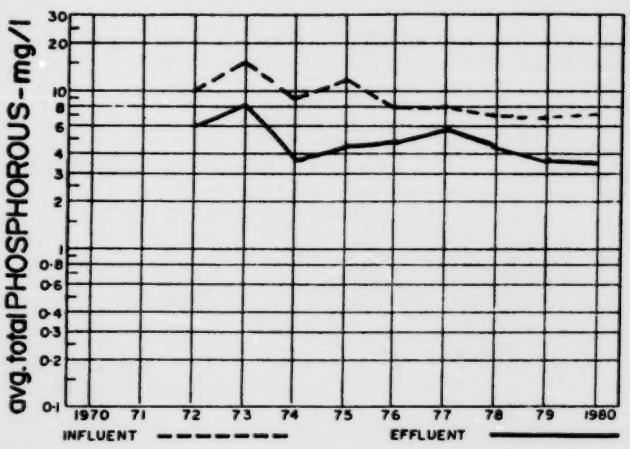
PUMPING STATIONS

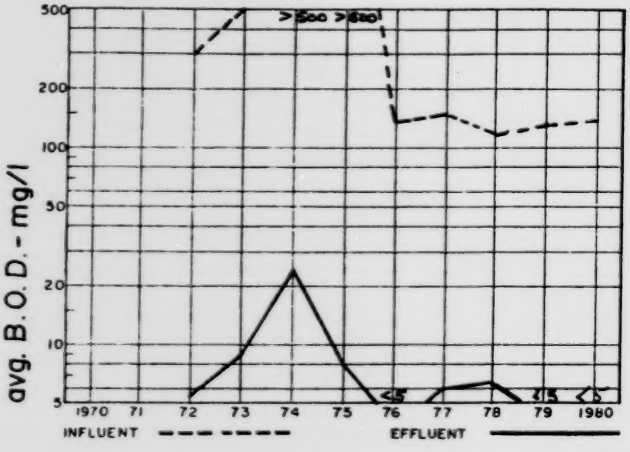
North Side
Two Flygt Model CP-3100, 350 US gpm @ 35' TDH

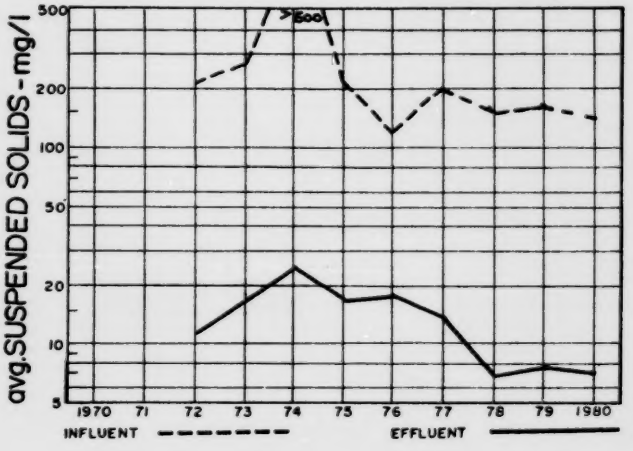
Water Street

Two Flygt Model CP-3100, 150 US gpm @ 25' TDH









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000141 EGANVILLE NPCP

MUNICIPALITY : EGANVILLE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 1,307
POPULATION SERVED : 1,292
PERCENT SERVED : 98.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.763 1000 M3 DESIGN BOD5 : 182.0 MG/L DESIGN SUSP.SOLIDS : 154.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	11.033	.329	.399	1.150	217.0	5.0	97	2.3	190.0	11.0	94	1.9	9.4	4.7	50	.052
FEB	8.984	.310	.349	.950	203.0	6.0	97	1.7	238.0	8.0	96	2.0	10.0	5.1	49	.044
MAR	11.033	.356	.487	1.150	160.0	4.0	97	1.7	195.0	8.0	95	2.0	9.2	4.6	50	.051
APR	14.371	.479	.609	1.100	108.0	1.2	98	1.5	102.0	15.5	84	1.2	4.9	1.8	63	.045
MAY	14.753	.476	.563	1.100	118.0	3.0	97	1.6	138.0	6.0	95	1.9	7.0	3.1	55	.058
JUN	11.920	.397	.496	1.500	117.0	3.4	97	1.3	138.0	9.0	93	1.5	8.1	4.5	44	.043
JUL	11.752	.379	.471	1.600	86.0	3.0	96	.9	110.0	6.0	94	1.2	5.6	3.7	33	.022
AUG	10.725	.346	.407	1.350	114.0	2.0	98	1.2	63.0	3.0	95	.6	6.0	3.5	41	.027
SEP	10.606	.354	.408	1.050	140.0	1.4	99	1.4	118.0	5.0	95	1.1	7.1	4.3	39	.030
OCT	12.003	.387	.485	1.000	158.0	1.8	98	1.8	143.0	2.0	98	1.6	7.6	3.7	51	.047
NOV	11.546	.385	.413	1.000	172.5	3.0	98	1.9	170.0	5.0	97	1.9	8.0	3.8	52	.048
DEC	10.333	.333	.418	1.150	145.0	2.0	98	1.4	130.0	10.5	91	1.2	4.4	3.9	11	.005
TOTAL	139.059							19.3				18.7				.472
AVERAGE		.378			144.8	2.9	97		144.5	7.4	94		7.2	3.8	46	
MAXIMUM			.609	1.600												
NO. OF SAMPLES					24	24			24	23			23	24		

DESIGN DATA - METRIC

ERNESTOWN (ODESSA)

PROJECT: Ernestown Twp. (Odessa) WPCP

PROJECT NO: 1-0177-68

TREATMENT: Extended Aeration

DESIGN FLOW: 0.909 $10^3 m^3/d$

PUMPING STATION

Three Midland ABS Model AFP-0010 101.6 mm submersible pumps each rates at 22.7 l/s @ 11.9 m TDH with 210 mm. impeller, at 30.3 l/s @ 13.1 m TDH with 220 mm. impeller.

PRIMARY TREATMENT

Grit Removal

See: Two, Grit Channels 0.46 m wide 6.1 m long with proportional weirs.

Comminution

Type: One, BIF Waste Disintegrator

SECONDARY TREATMENT

Aeration Tank

Size: One 21.3 m x 9.1 m x 4.6 m SWD
Volume: 892.1 m^3
Loading: 0.62 kg BOD/ m^3
Two, 5.6 KW lighting aerators

Clarifier

Size: One, 18.3 m x 5.8 m with upflow of 32.2 $m^3/m^2.d$ @ peak flow of 3.4 x $10^3 m^3/d$

CHEMICAL TREATMENT

Chlorination

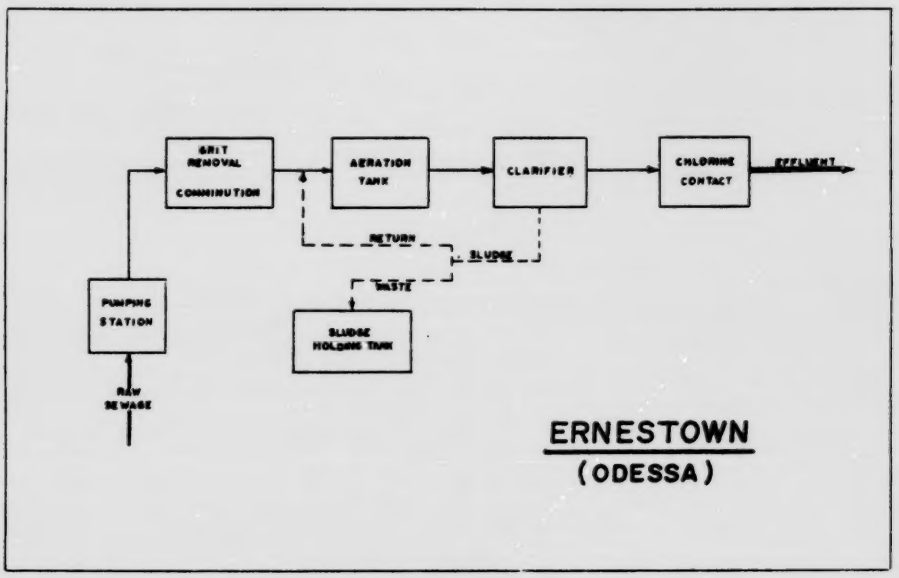
Chlorine contact tank - 30 min. detention time at avg. flow, with clorinator pump.

Phosphorus Removal

SLUDGE HANDLING

Sludge Handling Tank

28.3 m^3 providing 0.014 m^3 per person served.



DESIGN DATA - IMPERIAL

PROJECT Ernestown Twp. (Odessa) W.P.C.P.

PROJECT NO. 1-0177-68

TREATMENT Extended Aeration

DESIGN FLOW 0.2 MIGD

PUMPING STATION

Three Midland ABS Model AFP-0010 4" submersible pumps each rated at 300 IGPM @ 39' TDH with 210 mm. impeller, at 400 IGPM @ 43' TDH with 220 mm. impeller.

PRIMARY TREATMENT

Grit Removal

Two, Grit Channels 1.5' wide x 20' long with proportional weirs.

Comminution

One, BIF Waste Disintegrator

SECONDARY TREATMENT

Aeration Tank

One 70' x 30' x 15' SWD
31500 Cu. Ft. (0.196 MIG)
Loading - 13 lb. BOD/1000 Cu. Ft.
Two, 7.5 Hp lighting aerators.

Clarifier

One, 60' x 19' with upflow of 658 IGPD/ft^2 @ peak flow of 0.75 MIGD

CHEMICAL TREATMENT

Chlorination

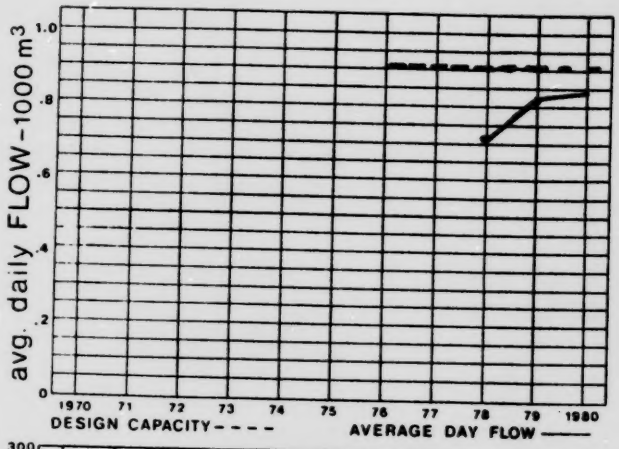
Chlorine contact tank - 30 min. detention time at avg. flow, with chlorinator pump.

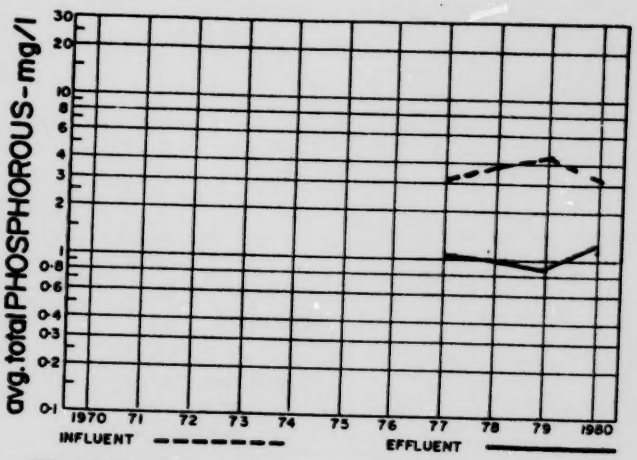
Phosphorus Removal

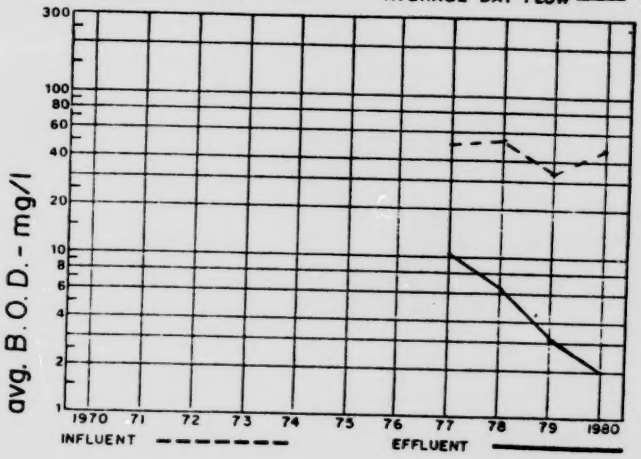
SLUDGE HANDLING

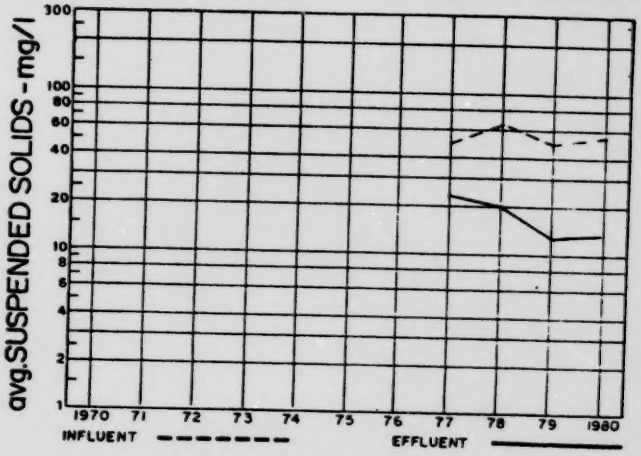
Sludge Holding Tank

1000 Cu. Ft. providing 0.5 Cu. Ft. per person served.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002041 ODESSA M P C P

MUNICIPALITY : ERNESTOWN (ODESSA)
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 11,211
POPULATION SERVED : 1,600
PERCENT SERVED : 14.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : - MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	18.090	.590	.997		42.0	3.0	92	.7	58.0	22.3	61	.6	3.8	.9	74	.052
FEB	11.220	.390	.650		65.0	4.3	93	.6	57.0	22.0	61	.3	5.1	1.2	76	.044
MAR	27.387	.891	1.710		53.0	3.5	93	1.3	68.0	24.5	63	1.1	3.6	1.2	65	.065
APR	39.657	1.322	2.041		46.0	2.0	95	1.7	45.0	20.0	55	.9	1.7	.8	50	.034
MAY	25.572	.852	1.554		39.0	2.0	94	.9	34.0	15.0	55	.4	2.5	.8	65	.042
JUN	14.840	.495	.918		74.0	2.2	97	1.0	97.5	14.0	85	1.2	3.3	1.2	63	.031
JUL	21.428	.691	2.278		51.3	1.1	97	1.0	71.7	9.0	87	1.3	2.3	1.7	26	.013
AUG	22.577	.778	1.521		82.0	1.0	98	1.8	65.0	8.0	87	1.2	4.0	1.5	62	.056
SEP	28.965	.965	1.392		50.0	1.0	98	1.4	40.0	12.0	70	.8	4.0	1.9	52	.061
OCT	27.783	.896	2.124		36.0	1.0	97	.9	60.0	11.5	80	1.3	3.6	2.0	44	.044
NOV	29.065	.969	1.582		36.8	1.6	95	1.0	45.0	11.0	75	.9	2.7	1.3	51	.041
DEC	39.236	1.260	2.272		19.0	1.4	92	.6	26.0	10.0	61	.6	1.4	.9	35	.020
TOTAL	305.820							13.5				11.3				.503
AVERAGE		.842			49.5	2.0	95		55.6	14.9	73		3.1	1.3	58	
MAXIMUM			2.278													
NO. OF SAMPLES					28	27			28	27			27	27		

DESIGN DATA - METRIC

FRANKFORD

PROJECT VILLAGE OF FRANKFORD

PROJECT NO. 1-0132-67
TREATMENT Contact Stabilization
DESIGN FLOW 1.4 x 10^3 m^3/d
DESIGN POPULATION 3000

BOD Loading: 170 mg/l

SS Loading: 200 mg/l

PUMPING STATIONS

No. 1 - 2 submersible pumps (1 standby) @ 18.9 l/s and 6.7 kW each

No. 2 - 2 submersible pumps (1 standby) @ 6.3 l/s and 1.9 kW each

No. 3 - 2 submersible pumps @ 15.1 l/s and 5.6 kW each.

PRETREATMENT

Grit Removal

2 channels 7.3m x .6m x .9m deep each

Comminution

One 0.95 cm mechanically cleaned comminutor rated at 7.6 x 10^3 m^3/d

SECONDARY TREATMENT

Aeration Tank

Mixing Volume: 117.4m^3
Reaeration Volume: 297.0m^3

Clarifier

Volume: 442.0m^3

Air Supply:

2 blowers @ 45.5 kW

TERTIARY TREATMENT

Phosphorous Removal

22.7m3 storage tank

SLUDGE TREATMENT

Aerobic Digester

Two compartments 340.7m^3

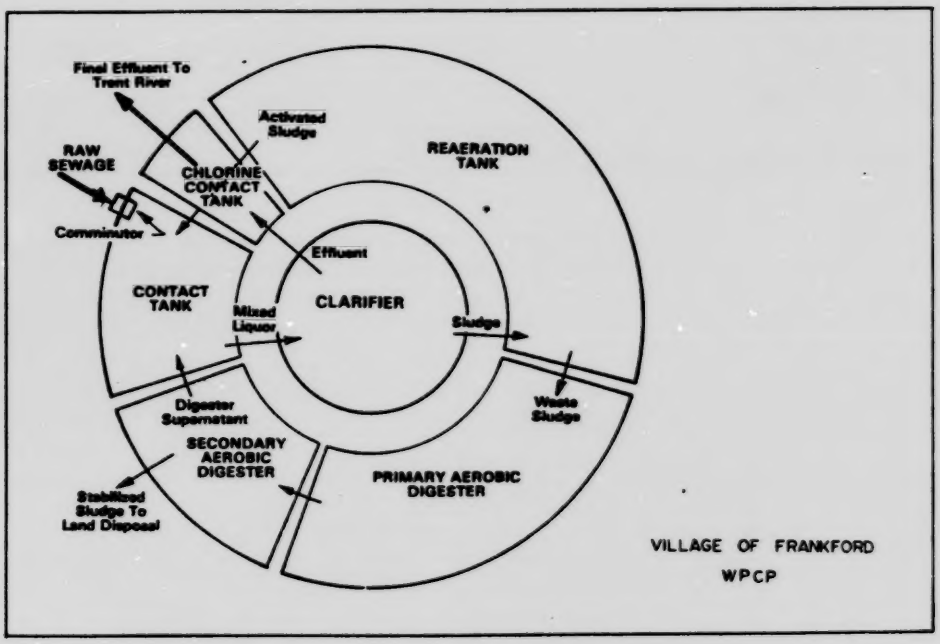
CHLORINATION

Chlorine Contact Chamber

Volume: 34.0m^3

OUTFALL

To Trent River



DESIGN DATA - IMPERIAL

PROJECT VILLAGE OF FRANKFORD

PROJECT NO. 1-0132-67
TREATMENT
DESIGN FLOW 0.3 mgd
DESIGN POPULATION 3000

BOD Loading: 170 mg/l

SS Loading: 200 mg/l

PUMPING STATIONS

No.1 -2 submersible pumps (1 standby) @ 250 lgpm and 9 hp. each.

No.2 -2 submersible pumps (1 standby) @ 85 lgpm and 2½ hp. each.

No.3 -2 submersible pumps @ 200 lgpm and 7½ hp. each.

PRETREATMENT

Grit Removal

2 channels 24' X 2' X 3' deep each

Comminution

One 3/8" mechanically cleaned comminutor rated at 1.67 mgd.

SECONDARY TREATMENT

Aeration Tank

Mixing Volume: 4144 ft.^{3}
Reaeration Volume: 10,487 ft.^{3}

Clarifier

Volume: 15,635 ft.^{3}

Air Supply:

2 blowers @ 61 hp.

TERTIARY TREATMENT

Phosphorous Removal

5000 gal. storage tank.

SLUDGE TREATMENT

Aerobic Digester

Two compartments 12,032 ft.^{3}

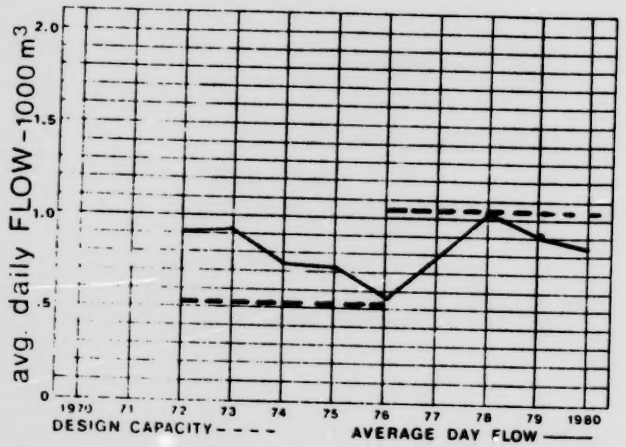
CHLORINATION

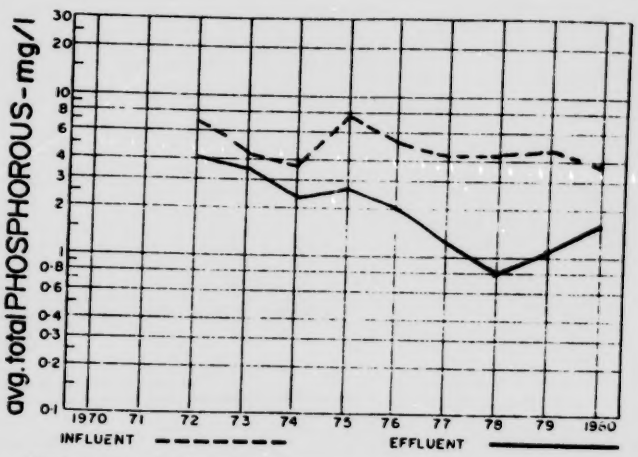
Chlorine Contact Chamber

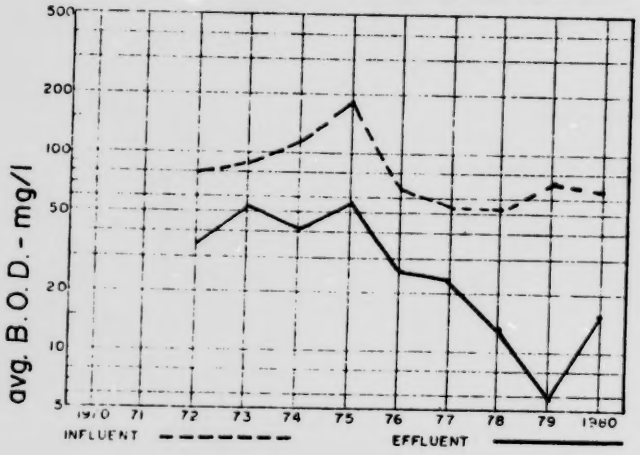
Volume: 1200 ft.^{3}

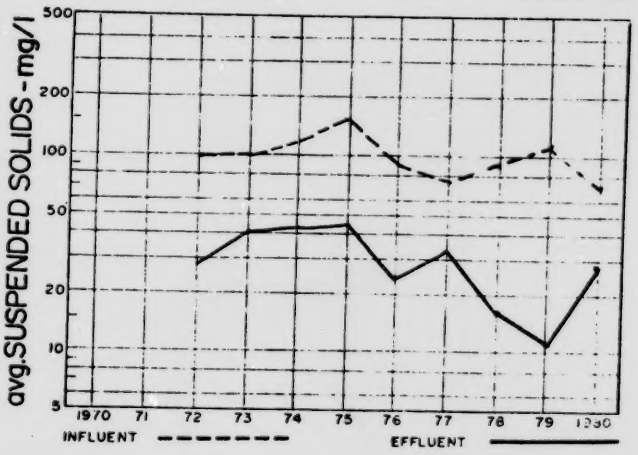
OUTFALL

To Trent River.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000267 FRANKFORD M P C P

MUNICIPALITY : FRANKFORD
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,872
POPULATION SERVED : 1,900
PERCENT SERVED : 101.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.363 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	30.727	.991	1.462		38.0	43.0	-	-	65.0	50.0	23	.4	3.4	2.7	20	.022
FEB	21.126	.728	1.690	1.360	111.0	30.0	72	1.7	115.0	25.5	77	1.8	3.0	3.1	-	-
MAR	41.300	1.330	3.060	3.200	*	*			*	*			*	*		
APR	51.880	1.730	2.398	3.240	25.0	26.0	-	-	27.0	24.0	11	.1	4.0	2.2	45	.093
MAY	31.770	1.020	2.023	2.640	52.0	4.0	92	1.5	56.0	10.0	82	1.4	4.1	1.6	60	.079
JUN	22.290	.740	.738	.380	52.0	3.0	94	1.0	73.0	9.5	86	1.4	4.5	1.5	66	.067
JUL	19.545	.630	1.008		88.0	3.0	96	1.6	106.0	78.0	26	.5	5.0	2.0	60	.059
AUG	16.305	.526	.724	.500	36.0	1.0	97	.5	101.0	9.8	90	1.4	5.2	.5	90	.076
SEP	14.770	.492	.724	.460	156.0	2.9	98	2.2	101.0	12.0	88	1.3	6.0	.9	85	.076
OCT	18.000	.580	1.696	.550	48.0	2.0	95	.8	58.0	6.0	89	.9	2.6	.6	76	.036
NOV	20.608	.689	.844	.340	62.0	2.0	96	1.2	87.3	2.2	97	1.7	2.8	.8	71	.041
DEC	23.838	.769	1.357	.650	52.0	1.0	98	1.2	63.6	3.5	94	1.4	2.8	.9	67	.045
TOTAL	312.159							12.1				12.8				.594
AVERAGE		.852			65.4	10.7	83		77.5	20.9	72		3.9	1.5	61	
MAXIMUM			3.060	3.240												
NO. OF SAMPLES					14	15			51	51			51	51		

DESIGN DATA - METRIC

FRANKFORD

PROJECT VILLAGE OF FRANKFORD

PROJECT NO. 1-0132-67
TREATMENT Contact Stabilization
DESIGN FLOW 1.4 x 10^3 m^3/d
DESIGN POPULATION 3000

BOD Loading: 170 mg/l

SS Loading: 200 mg/l

PUMPING STATIONS

No. 1 - 2 submersible pumps (1 standby) @ 18.9 l/s and 6.7 kW each

No. 2 - 2 submersible pumps (1 standby) @ 6.3 l/s and 1.9 kW each

No. 3 - 2 submersible pumps @ 15.1 l/s and 5.6 kW each.

PRETREATMENT

Grit Removal

2 channels 7.3m x .6m x .9m deep each

Comminution

One 0.95 cm mechanically cleaned comminutor rated at 7.6 x 10^3 m^3/d

SECONDARY TREATMENT

Aeration Tank

Mixing Volume: 117.4m^3
Reaeration Volume: 297.0m^3

Clarifier

Volume: 442.8m^3

Air Supply:

2 blowers @ 45.5 kW

TERTIARY TREATMENT

Phosphorous Removal

22.7m3 storage tank

SLUDGE TREATMENT

Aerobic Digester

Two compartments 340.7m^3

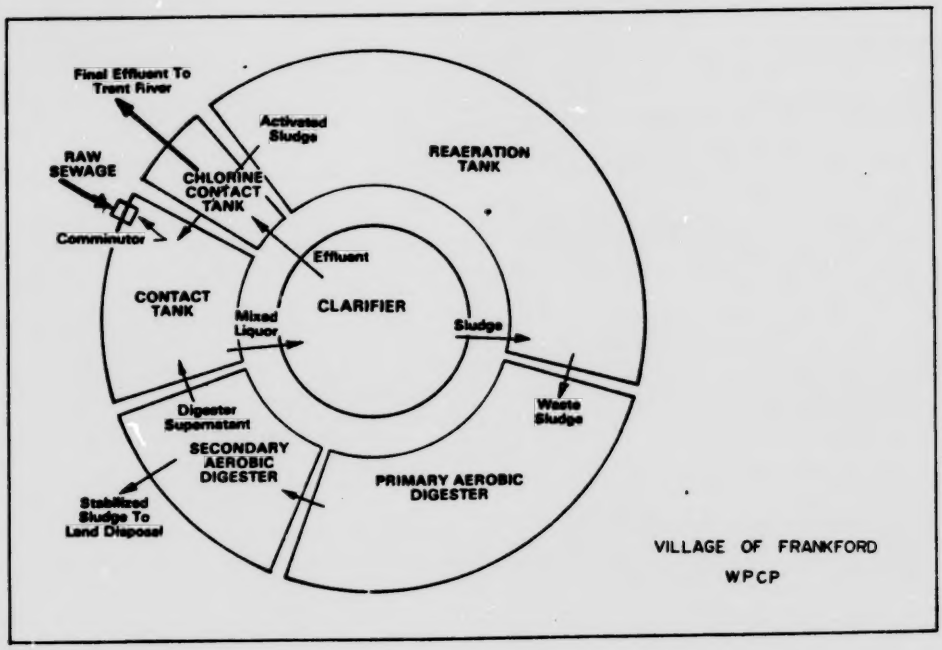
CHLORINATION

Chlorine Contact Chamber

Volume: 34.0m^3

OUTFALL

To Trent River



DESIGN DATA - IMPERIAL

PROJECT VILLAGE OF FRANKFORD

PROJECT NO. 1-0132-67
TREATMENT
DESIGN FLOW 0.3 mgd
DESIGN POPULATION 3000

BOD Loading: 170 mg/l

SS Loading: 200 mg/l

PUMPING STATIONS

No.1 -2 submersible pumps (1 standby) @ 250 lgpm and 9 hp. each.

No.2 -2 submersible pumps (1 standby) @ 85 lgpm and 2½ hp. each.

No.3 -2 submersible pumps @ 200 lgpm and 7½ hp. each.

PRETREATMENT

Grit Removal

2 channels 24' X 2' X 3' deep each

Comminution

One 3/8" mechanically cleaned comminutor rated at 1.67 mgd.

SECONDARY TREATMENT

Aeration Tank

Mixing Volume: 4144 $ft.^3$
Reaeration Volume: 10,487 $ft.^3$

Clarifier

Volume: 15,635 $ft.^3$

Air Supply:

2 blowers @ 61 hp.

TERTIARY TREATMENT

Phosphorous Removal

5000 gal. storage tank.

SLUDGE TREATMENT

Aerobic Digester

Two compartments 12,032 $ft.^3$

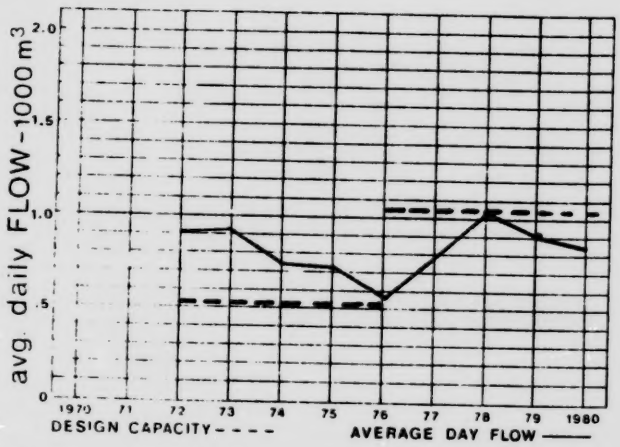
CHLORINATION

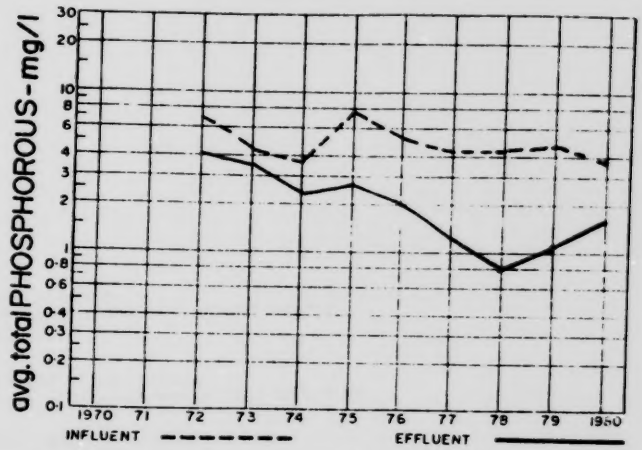
Chlorine Contact Chamber

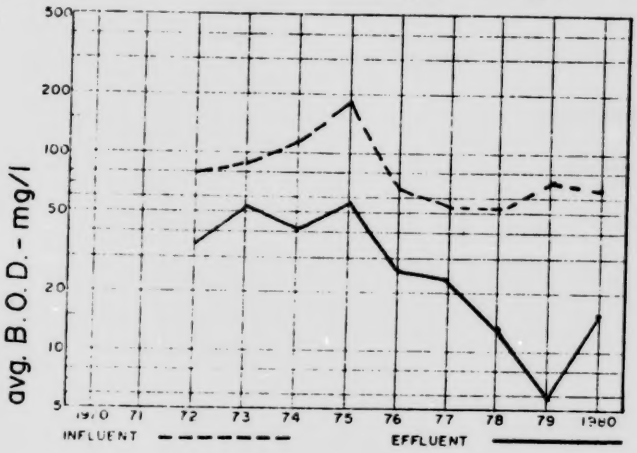
Volume: 1200 $ft.^3$

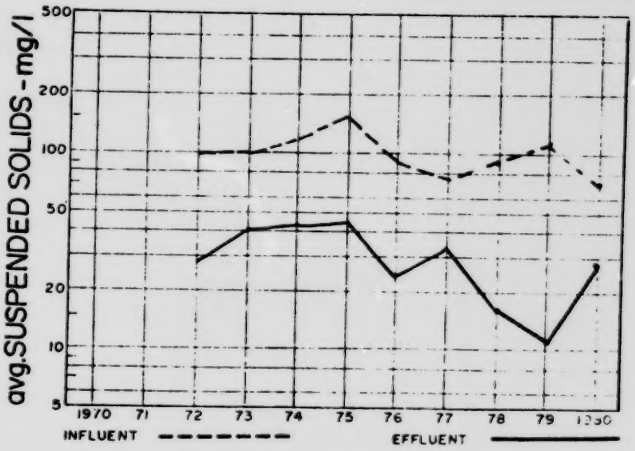
OUTFALL

To Trent River.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000267 FRANKFORD M P C P

MUNICIPALITY : FRANKFORD
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,872
POPULATION SERVED : 1,900
PERCENT SERVED : 101.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.363 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<-- FLOW DATA -->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	30.727	.991	1.462		38.0	43.0	-	-	65.0	50.0	23	.4	3.4	2.7	20	.022
FEB	21.126	.728	1.690	1.360	111.0	30.0	72	1.7	115.0	25.5	77	1.8	3.0	3.1	-	-
MAR	41.300	1.330	3.060	3.200	*	*			*	*			*	*		
APR	51.880	1.730	2.398	3.240	25.0	26.0	-	-	27.0	24.0	11	.1	4.0	2.2	45	.093
MAY	31.770	1.020	2.023	2.640	52.0	4.0	92	1.5	56.0	10.0	82	1.4	4.1	1.6	60	.079
JUN	22.290	.740	.738	.380	52.0	3.0	94	1.0	73.0	9.5	86	1.4	4.5	1.5	66	.067
JUL	19.545	.630	1.008		88.0	3.0	96	1.6	106.0	78.0	26	.5	5.0	2.0	60	.059
AUG	16.305	.526	.724	.500	36.0	1.0	97	.5	101.0	9.8	90	1.4	5.2	.5	90	.076
SEP	14.770	.492	.724	.460	156.0	2.9	98	2.2	101.0	12.0	88	1.3	6.0	.9	85	.076
OCT	18.000	.580	1.696	.550	48.0	2.0	95	.8	58.0	6.0	89	.9	2.6	.6	76	.036
NOV	20.608	.689	.844	.340	62.0	2.0	96	1.2	87.3	2.2	97	1.7	2.8	.8	71	.041
DEC	23.838	.769	1.357	.650	52.0	1.0	98	1.2	63.6	3.5	94	1.4	2.8	.9	67	.045
TOTAL	312.159							12.1				12.8				.594
AVERAGE		.852			65.4	10.7	83		77.5	20.9	72		3.9	1.5	61	
MAXIMUM			3.060	3.240												
NO. OF SAMPLES					14	15			51	51			51	51		

HAGARTY & RICHARDS (KILLALOE)

DESIGN DATA - METRIC

PROJECT: KILLALOE STATION WPCP

PROJECT NO: 1-0031-67

TREATMENT: Extended Aeration/Contact Stabilization Phosphorus Removal, Effluent Clorination.

DESIGN FLOW: 0.518 $10^3 m^3/d$

DESIGN BOD:

DESIGN SS:

PUMPING STATIONS: One pumping station with 2 pumps each at 22.33 l/s, submersible type station.

PRIMARY TREATMENT

Grit Removal: 2 channels mechanically cleaned
Comminutor: has a bypass bar screen
Instrumentation: Parshall flume metering system.

SECONDARY TREATMENT

Aeration tank: 3.35m wide, 3.96m deep and occupies 350° of the annulus of a 2 compartment type unit.
Clarifier: 9.14m in diameter and 3.05m swd
Blowers: Type: 2 Rootes, Size: 156.7 l/s
Clorination: Solution type chlorinators with a contact chamber of 10.910 m^3.
Phosphorus Removal: Alum or ferric chloride added.

SLUDGE HANDLING:

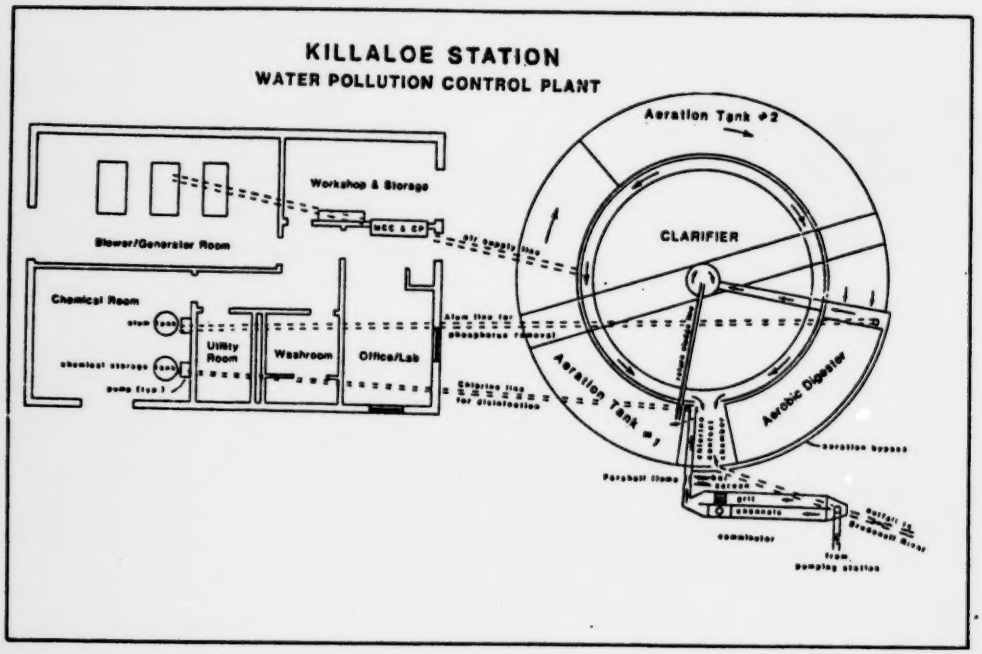
Aerated sludge holding tank possible.

STANDBY POWER:

A diesel located in the plant for use by the plant and the pumping station if required.

DISPOSAL:

Wastewater to the tributary of Brundell Creek with sludge, land disposal.



HAGARTY & RICHARDS (KILLALOE)

DESIGN DATA - IMPERIAL

PROJECT: KILLALOE STATION WPCP

PROJECT NO: 1-0031-67

TREATMENT: Extended Aeration/Contact Stabilization Phosphorus Removal, Effluent Clorination.

DESIGN FLOW: 0.114 mgd

DESIGN BOD:

DESIGN SS:

PUMPING STATIONS: One pumping station with 2 pumps each at 295 lgpm, submersible type station.

PRIMARY TREATMENT

Grit Removal: 2 channels mechanically cleaned
Comminutor: has a bypass bar screen
Instrumentation: Parshall flume metering system.

SECONDARY TREATMENT

Aeration tank: 11' wide, 13' deep and occupies 380° of the annulus of a 2 compartment type unit.
Clarifier: 30' in diameter and 10' swd
Blowers: Type: 2 Rootes, Size: 375 cfm
Clorination: Solution type chlorinators with a contact chamber of 2,400 gallons.
Phosphorus Removal: Alum or ferric chloride added.

SLUDGE HANDLING:

Aerated sludge holding tank possible.

STANDBY POWER:

A diesel located in the plant for use by the plant and the pumping station if required.

DISPOSAL:

Wastewater to the tributary of Brundell Creek with sludge, land disposal.

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001532 KILLALOE STATION MPCP

MUNICIPALITY : HAGARTY & RICHARDS(KILLA
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL
EFFLUENT CHLORINATION

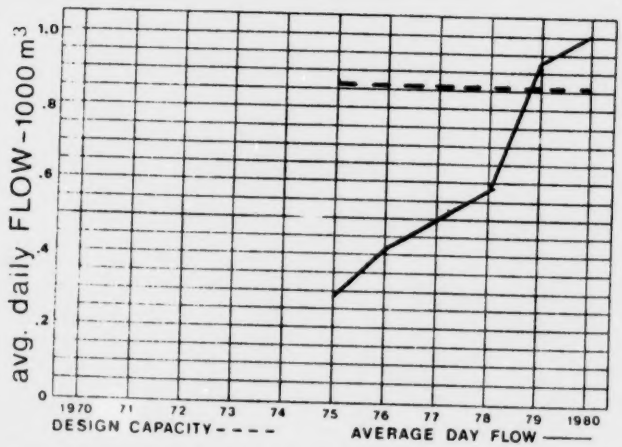
CURRENT POPULATION : 698
POPULATION SERVED : 700
PERCENT SERVED : 100.2

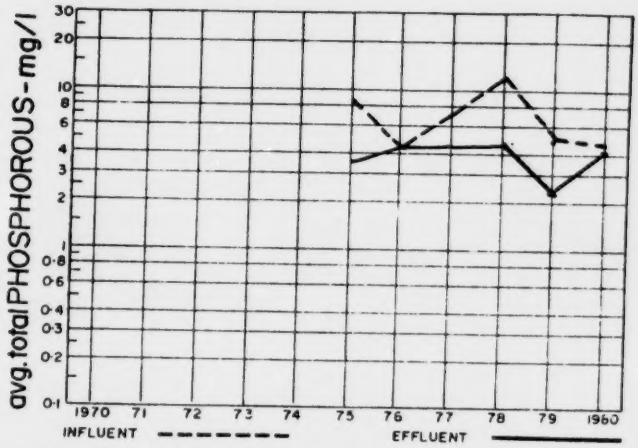
OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

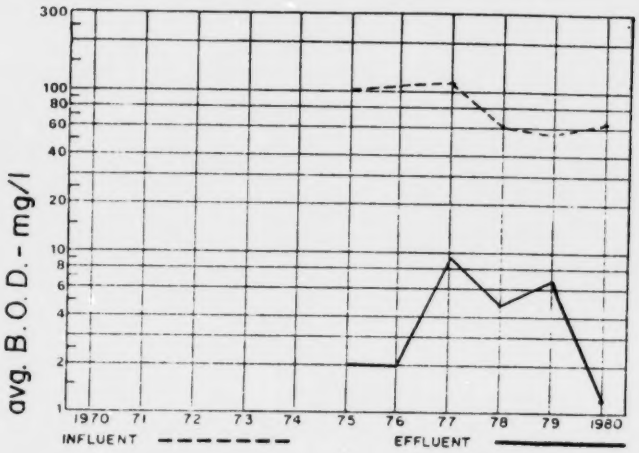
DESIGN CAPACITY : 0.518 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

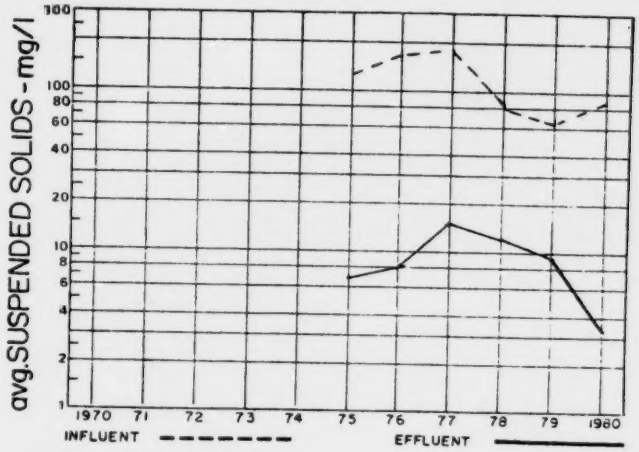
	<-- FLOW DATA -->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	1.829	.059	.059	.090	302.0	16.0	94	.5	372.0	17.0	95	.6	16.0	6.7	58	.017
FEB	1.783	.062	.068	.068	300.0	21.0	93	.4	343.0	20.0	94	.5	18.5	8.4	54	.018
MAR	2.108	.068	.068	.015	268.0	8.5	96	.5	296.0	21.0	92	.5	15.5	8.5	45	.015
APR	2.100	.070	.131	.015	247.0	3.0	98	.5	360.0	14.0	96	.7	43.0	4.6	89	.081
MAY	2.563	.083	.108	.001	222.0	2.0	99	.5	184.0	14.0	92	.4	8.3	2.8	66	.014
JUN	2.863	.095	.112	.001	151.5	21.0	86	.3	287.4	30.0	89	.7	11.8	2.0	83	.028
JUL	1.655	.053	.079	.001	393.0	3.0	99	.6	530.0	13.0	97	.8	20.0	3.9	80	.027
AUG	2.308	.074	.118	.001	335.0	1.0	99	.7	381.0	10.0	97	.8	17.0	3.4	80	.031
SEP	3.137	.105	.122	.001	287.0	1.0	99	.8	468.0	6.7	98	1.4	15.4	3.0	80	.039
OCT	3.773	.123	.194	.002	383.0	1.6	99	1.4	758.0	9.5	98	2.8	20.0	2.6	87	.066
NOV	4.411	.147	.173	.002	235.0	1.0	99	1.0	429.0	8.0	98	1.8	13.0	2.0	84	.049
DEC	5.458	.176	.205	.654	370.0	1.0	99	2.0	333.0	8.4	97	1.7	13.8	1.6	88	.067
TOTAL	33.988							9.8				13.3				.452
AVERAGE		.093			291.1	6.6	97		395.1	14.3	96		17.6	4.1	76	
MAXIMUM			.205	.654												
NO. OF SAMPLES					24	23			89	89			53	55		

L'ORIGINAL WPCP









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001701 LORIGNAL MPCP

MUNICIPALITY : L'ORIGNAL
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,453
POPULATION SERVED : 1,200
PERCENT SERVED : 82.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.863 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	13.017	.419	.551	.907	30.0	1.0	96	.3	58.0	5.0	91	.6	2.9	4.0	-	-
FEB	15.347	.529	1.991	2.300	61.0	2.0	96	.9	57.0	8.0	85	.7	5.1	4.8	5	.005
MAR	23.495	.750	1.762	2.300	48.0	2.0	95	1.0	59.0	9.0	84	1.1	3.9	3.3	15	.014
APR	23.230	.774	1.722	2.273	64.0	17.0	73	1.0	83.0	37.0	55	1.0	4.1	3.1	24	.023
MAY	28.776	.928	1.467	2.273	58.0	6.3	89	1.4	65.0	13.0	80	1.4	4.5	3.1	31	.040
JUN	27.990	.933	1.733	2.273	87.0	10.0	88	2.1	85.0	15.0	82	1.9	6.5	3.3	49	.090
JUL	34.543	1.114	1.640	2.273	90.0	60.0	33	1.0	108.0	229.0	-	-	5.8	12.0	-	-
AUG	39.105	1.261	2.490	2.273	43.0	6.0	86	1.4	79.0	19.0	75	2.3	3.4	3.0	11	.016
SEP	29.520	.984	1.816	2.273	130.0	22.0	83	3.1	114.0	9.0	92	3.1	6.2	3.9	37	.068
OCT	43.520	1.404	2.272	2.273	36.0	3.0	91	1.4	71.0	7.0	90	2.7	3.4	2.4	29	.044
NOV	47.955	1.599	2.850	2.273	60.0	4.0	93	2.6	159.0	9.0	94	7.1	5.6	2.6	53	.144
DEC	41.550	1.340	3.234	2.273	46.0	*			45.0	*			2.6	*		
TOTAL	368.048							16.8				22.5				.444
AVERAGE		1.003			62.7	12.1	80		81.9	32.7	60		4.5	4.1	8	
MAXIMUM			3.234	2.300												
NO. OF SAMPLES					24	24			36	37			23	24		

MARMORA

DESIGN DATA - METRIC

PROJECT: Village of Marmora WPCP

PROJECT NO: 1-0050-66

TREATMENT: Extended Aeration

DESIGN FLOW: 0.87 $10^3 m^3$/d
(1.5 $10^3 m^3$/d operated as step-aeration)

BOD - 200 mg/l

SS - 200 mg/l

PUMPING STATION

Type: Three, Midland AFP-0010
Size: each 28.4 l/s @ 12.5 m TDH

GRIT CHANNELS

(At circumference of plant)
Size: Two, each 6.1 m x .5 m x .2 m swd
Volume: (each) .4
Retention: (each) 0.7 min

COMMINUTOR

Type: Jones and Atwood 10 R

AERATION TANK 1

Volume: 407.3 m^3
Retention: 11.2 hr

AERATION TANK 2

Volume: 505.7 m^3
Retention: 14.0 hr

BLOWERS

Type: Two, Sutorbilt 711-4500

CLARIFIER

Size: 8.2 m i.d_3 x 3.5 m swd
Volume: 160.0 m^3
Retention: 4.4 hr
Loading: - Surface
- Weir

SLUDGE PUMP

Type: One, Midland AFP-4
Size: 26.8 m^3

CHLORINE CONTACT CHAMBER

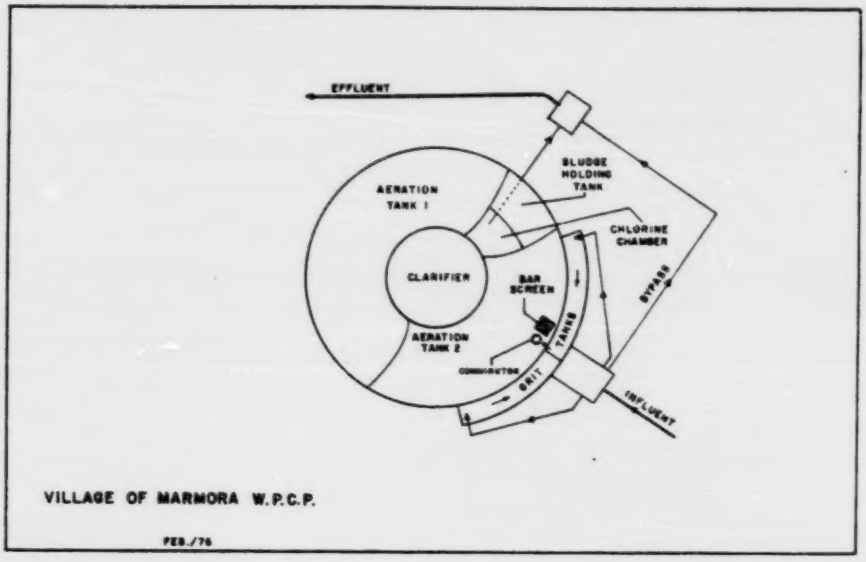
Volume: 41.4 m^3
Retention: 1.1 hr

CHLORINATOR

Type: One F and P 70c

SLUDGE HOLDING TANK

568.25 m^3



DESIGN DATA - IMPERIAL

PROJECT: Village of Marmora WPCP

PROJECT NO: 1-0050-66

TREATMENT: Extended Aeration

DESIGN FLOW: 0.191 mgd
(0.334 mgd operated as step-aeration)

BOD - 200 mg/l

SS - 200 mg/l

PUMPING STATION

Type: Three, Midland AFP-0010
Size: each 450 usgpm @41' TDH

GRIT CHANNELS

(at circumference of plant)
Size: Two, each 20'x 1.5' x 0.5' swd
Volume: (each) 94 IG
Retention: (each) 0.7 min

COMMINUTOR

Type: Jones and Atwood 10 R

AERATION TANK 1

Volume: 89,400 I.G.
Retention: 11.2 hr

AERATION TANK 2

Volume: 111,250 I.G.
Retention: 14.0 hr

BLOWERS

Type: Two, Sutorbilt 711-4500

CLARIFIER

Size: 26.8' i.d. x 11.5' swd
Volume: 35188 I.G.
Retention: 4.4 hr
Loading:
- Surface
- Weir

SLUDGE PUMP

Type: One, Midland AFP-4
Size: 425 usgpm

CHLORINE CONTACT CHAMBER

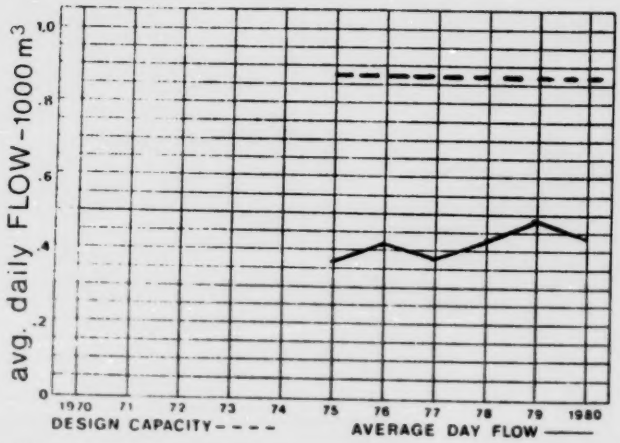
Volume: 9100 I.G.
Retention: 1.1 hr

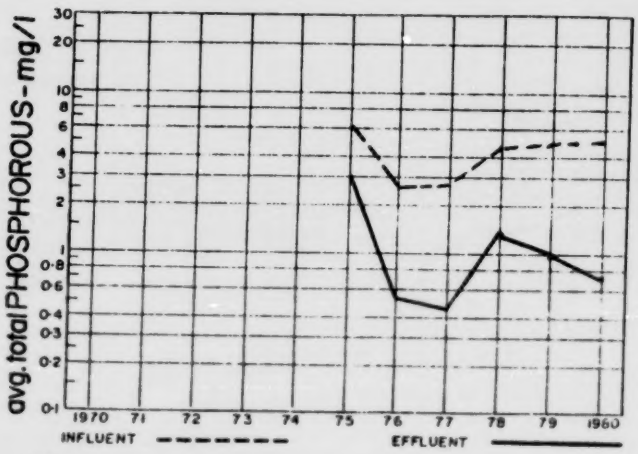
CHLORINATOR

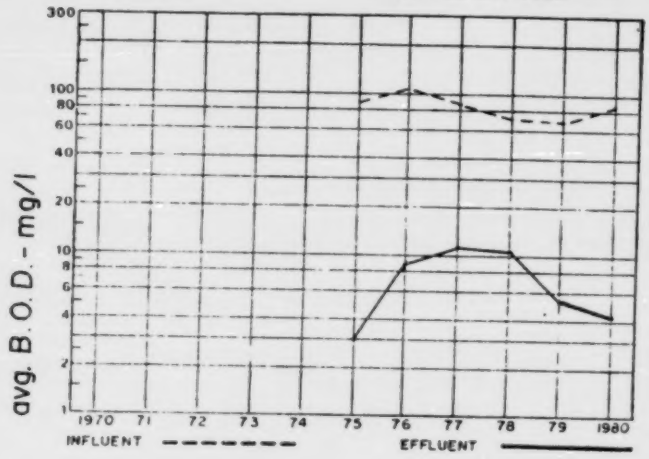
Type: One F and P 70c

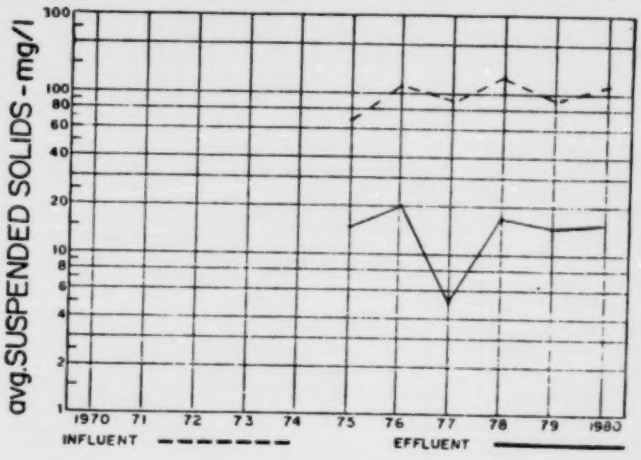
SLUDGE HOLDING TANK

12,500 I.G.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001863 MARMORA STP

MUNICIPALITY : MARMORA
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,293
POPULATION SERVED : 1,200
PERCENT SERVED : 92.8

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.868 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	15.513	.500			74.0	1.5	97	1.1	95.0	7.5	92	1.3	5.6	1.3	76	.067
FEB	10.174	.350			132.0	5.0	96	1.2	67.0	17.0	74	.5	5.0	.7	86	.044
MAR	21.632	.698			65.0	6.0	90	1.2	80.0	38.0	52	.9	4.6	.8	82	.082
APR	22.542	.751			44.0	5.0	88	.8	69.0	18.0	73	1.1	4.5	.9	80	.081
MAY	14.227	.458			74.0	21.0	71	.7	53.0	11.0	79	.5	4.2	.8	80	.048
JUN	11.453	.381			101.0	2.2	97	1.1	152.0	12.0	92	1.6	4.4	.4	90	.046
JUL	13.166	.424			110.0	1.2	98	1.4	170.0	17.0	90	2.0	4.6	.5	88	.054
AUG	10.615	.342			72.0	1.5	97	.7	122.0	16.0	86	1.1	4.9	.5	88	.046
SEP	9.801	.326			150.0	1.5	99	1.4	*	*			5.9	.7	88	.051
OCT	14.672	.473			49.0	2.0	95	.6	107.0	16.0	85	1.3	5.5	1.0	81	.066
NOV	11.979	.399			98.0	1.0	98	1.1	153.0	14.0	90	1.6	5.9	1.0	83	.059
DEC	15.627	.504			93.0	1.5	98	1.4	85.0	8.0	90	1.2	4.4	.4	88	.061
TOTAL	171.401							13.3				13.4				.705
AVERAGE		.467			88.5	4.1	95		104.8	15.8	84		4.9	.7	84	
MAXIMUM																
NO. OF SAMPLES					21	21			20	20			103	106		

DESIGN DATA - METRIC

PROJECT: Village of Merrickville WPCP

PROJECT NO.: 1-0019-66

TREATMENT: Extended Aeration

DESIGN FLOW: 0.50C $10^3 m^3/d$

BOD - Raw Sewage - 250 mg/l
- Removal 95%

SS - Raw Sewage - 250 mg/l
- Removal 95%

Sewage Pumps (at P.S.)
Size: Two - each 10.6 l/s @ 15.2m TDH
One - 18.2 l/s @ 15.2m TDH

Comminutor
Type: One CONDUX Mod 150

Grit Chamber
(at circumference of aeration tank)
Size: One 6.1m x 4m x 4m (.8 m^3)
Retention: 2.3 min.

MERRICKVILLE

Aeration Tank
Type: One, circular
Size: 12.6m x 1.d. x 4.3m swd ($550.1 m^3$)
Retention: 26.4 hr.
Aeration: Spargers with rotor

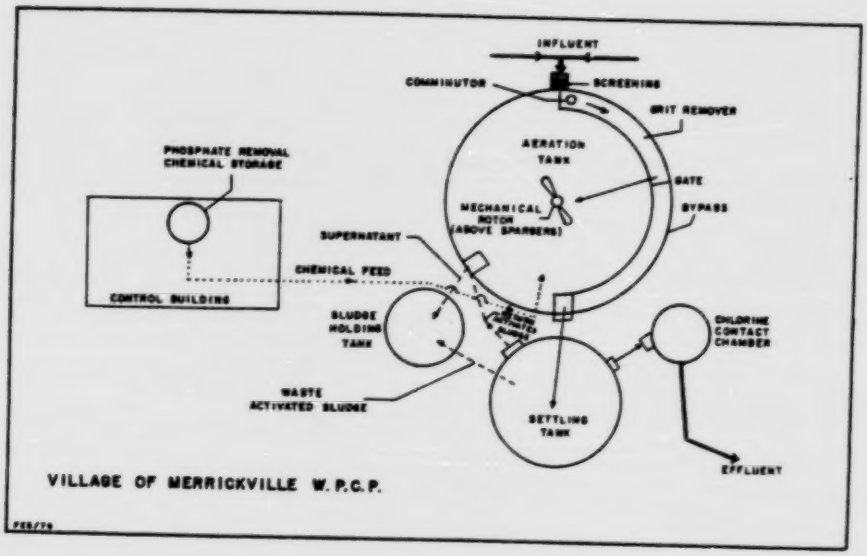
Blowers
Type: Two, SUTORBILT
Size: 110.7 l/s @ 31.0 kPa

Clarifier
Type: One, circular
Size: 6.1m i.d. x 2.7m swd ($80.0 m^3$)
Retention: 3.8 hr.
Loadings - Weir: $28.8 m^3/m.d$
- Surface: $17.1 m^3/m^2.d$

Chlorination Tank
Type: One, circular
Size: 2.3m i.d. x 2.7m swd
Retention: 32 min.

Chlorinator
Type: One, W and T Mod V800

Sludge Holding Tank
Type: One, circular
Size: 3.4m i.d. x 4.0m swd
$35.0 m^3$.



DESIGN DATA - IMPERIAL

Project: Village of Merrickville WPCP

Project No: 1-0019-66

Treatment: Extended Aeration

Design Flow: 0.110 M.I.G.D.

BOD - Raw Sewage - 250 mg/l
- Removal 95%

SS - Raw Sewage - 250 mg/l
- Removal 95%

Sewage Pumps (at P.S.)
Size: Two, each 140 I.G.P.M. @ 50' TDH
One, 240 I.G.P.M. @ 50' TDH

Comminutor:
Type: One, CONDUX Mod 150

Grit Chamber
(at circumference of aeration tank)

Size: One, 20' x 1.2' x 1.2'
(180 I.G.)
Retention: 2.3 min

Aeration Tank
Type: One, circular
Size: 42' x 14 x 14' swd
(121,000 I.G.)
Retention: 26.4 hr

Aeration: spargers with rotor

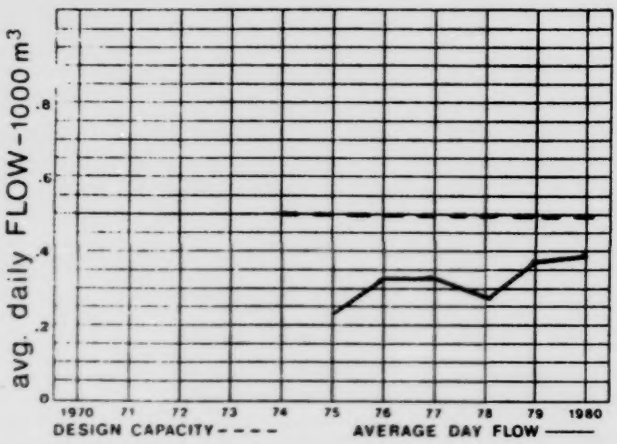
Blowers
Type: Two, SUTORBILT
Size: 265 cfm @ 4.5 psi

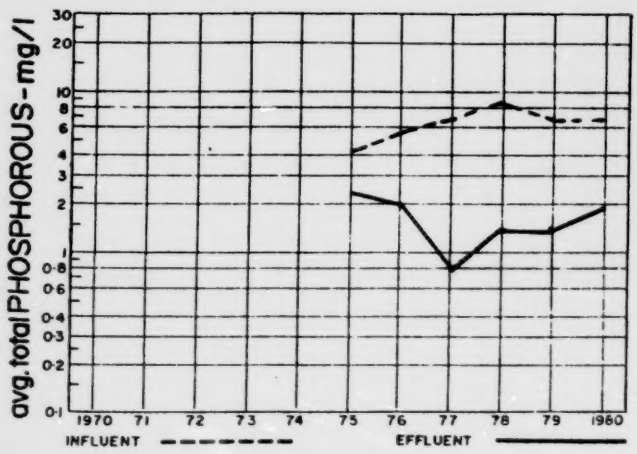
Clarifier
Type: One, circular
Size: 20' i.d. x 9' swd
17,600 I.G.
Retention: 3.8 hr
Loadings - Weir: 1930 I.G./ft/day
- Surface: 350 I.G./ft^2/day

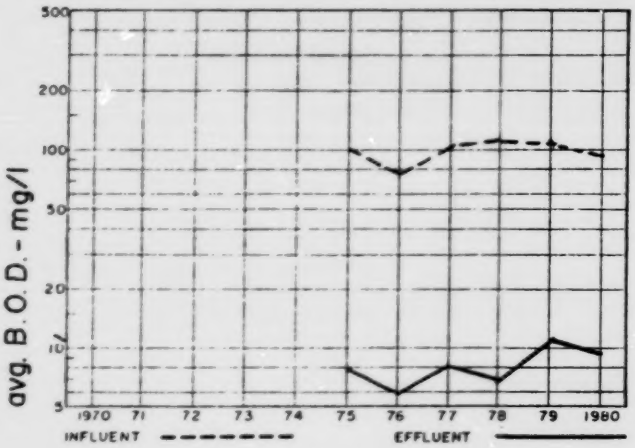
Chlorination Tank
Type: One, circular
Size: 7.5'i.d. x 9' swd
2480 I.G.
Retention: 32 min

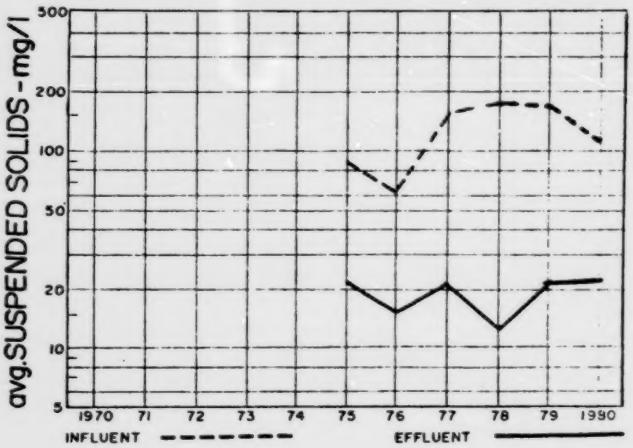
Chlorinator
Type: One, W and T Mod V800

Sludge Holding Tank
Type: One, circular
Size: 11' i.d. x 13' swd
7710 I.G.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001729 MERRICKVILLE MPCP

MUNICIPALITY : MERRICKVILLE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
PHOSPHORUS REMOVAL

CURRENT POPULATION : 934
POPULATION SERVED : 600
PERCENT SERVED : 64.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.500 1000 M3 DESIGN BOD5 : 250.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	18.467	.596	.873	1.532	86.0	4.0	95	1.5	115.0	19.0	83	1.7	6.7	1.3	80	.100
FEB	11.035	.381	.457	1.000	145.0	10.0	93	1.4	116.7	15.0	87	1.1	9.4	3.3	64	.067
MAR	19.017	.613	1.605	2.123	125.0	9.5	92	2.1	170.0	42.5	75	2.4	10.5	4.9	53	.106
APR	24.406	.814	1.383	2.000	75.5	15.7	79	1.4	87.5	27.5	68	1.4	5.9	2.6	55	.081
MAY	14.435	.466	1.001	1.409	77.0	26.0	66	.7	98.3	35.0	64	.9	5.9	2.7	54	.046
JUN	7.229	.241	.300	1.005	89.0	41.0	53	.3	103.0	78.0	24	.1	6.7	4.4	34	.017
JUL	7.939	.256	.325	.682	66.0	2.0	96	.5	102.5	11.5	88	.7	6.2	.4	92	.046
AUG	8.403	.271	.318	.673	91.3	1.0	98	.7	100.0	8.0	92	.7	5.8	.9	84	.041
SEP	7.042	.235	.279	.810	130.0	1.1	99	.9	160.0	6.5	95	1.0	9.2	1.0	88	.057
OCT	7.228	.233	.290	1.124	102.0	1.0	99	.7	140.0	5.5	96	.9	7.0	.3	95	.048
NOV	8.261	.275	.389	.764	91.0	1.7	98	.7	100.0	7.0	93	.7	5.6	.5	90	.042
DEC	10.909	.352	.494	1.076	65.5	1.5	97	.6	111.5	9.5	91	1.1	4.7	1.5	68	.035
TOTAL	144.371							12.0				13.3				.686
AVERAGE		.394			95.2	9.5	89		117.0	22.0	81		6.9	1.9	71	
MAXIMUM			1.605	2.123												
NO. OF SAMPLES					34	34			34	34			34	34		

DESIGN DATA - METRIC

PITTSBURGH (CANA)

PROJECT Pittsburgh Twp. (Cana)

PROJECT NO. 2-0288-70

TREATMENT Extended Aeration

DESIGN FLOW 0.095 $10^3 m^3/d$

DESIGN POPULATION 250

INFLUENT BOD 190 mg/l
SS 220 mg/l

EFFLUENT BOD 11 mg/l
SS 15 mg/l

PRIMARY TREATMENT

Bar screen and comminutor (Future)

SECONDARY TREATMENT

Aeration Tank:
Volume: 60.88 m^3
Loading: 132.6 kg/m^3 d
Detention: 21 Hours
Blowers: 2 providing 54.33 l/s @ 24.13 kPa

Secondary Sedimentation
Volume: 11.33 m^3
Loading: Surface 14.66 m^3/m^2 d
Detention: 4 hours

SLUDGE HANDLING

Digestion System
Type: Aerobic
Volume: 28.82 m^3

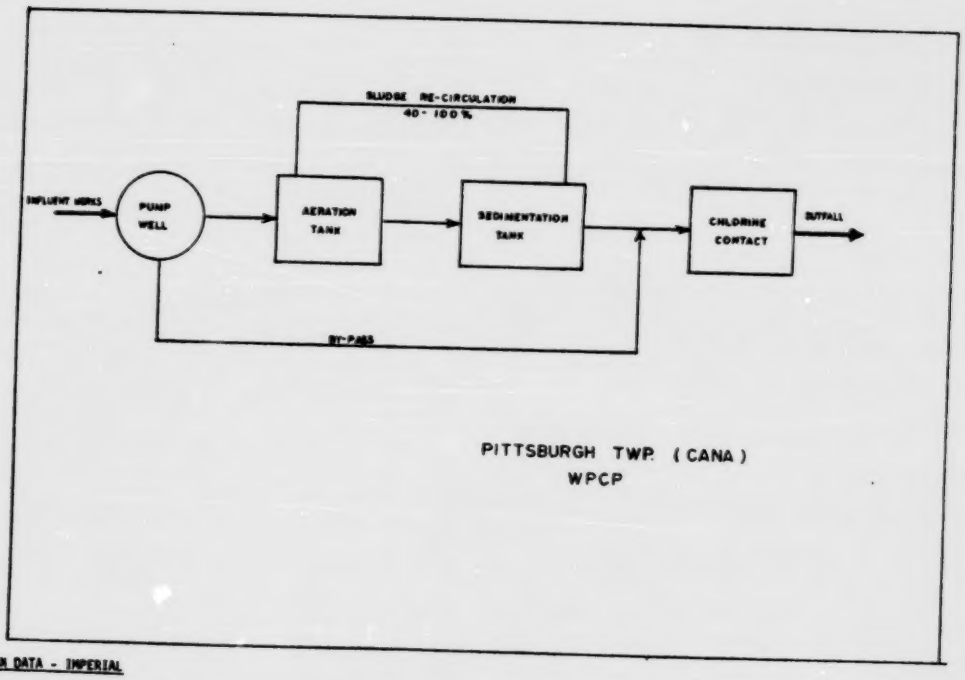
CHLORINATION

Retention: 30 minutes

Pumping Station #1
2 pumps @ 7.57 l/s

Outfall

To Rideau Canal (Cataraqui River).



PITTSBURGH TWP. (CANA)
WPCP

DESIGN DATA - IMPERIAL

PROJECT Pittsburgh Twp (Cana)

PROJECT NO. 2-0288-70
TREATMENT Extended Aeration

DESIGN FLOW 0.021 M I G D

DESIGN POPULATION 250

INFLUENT BOD 190 mg/l
SS 220 mg/l

EFFLUENT BOD 11 mg/l
SS 15 mg/l

PRIMARY TREATMENT

Bar screen and comminutor (Future)

SECONDARY TREATMENT

Aeration Tank:
Volume: 2150 ft^3
Loading: 13 lb. BOD/day/1000 ft^3
Detention: 21 Hours
Blowers: 2 providing 130 cfm @ 3.5 psi.

Secondary Sedimentation:
Volume: 400 ft^3
Detention: 4 hours
Loading: Surface, 300 $gal/ft^2/day$

SLUDGE HANDLING

Digestion System
Type: Aerobic
Volume: 1000 $ft.^3$

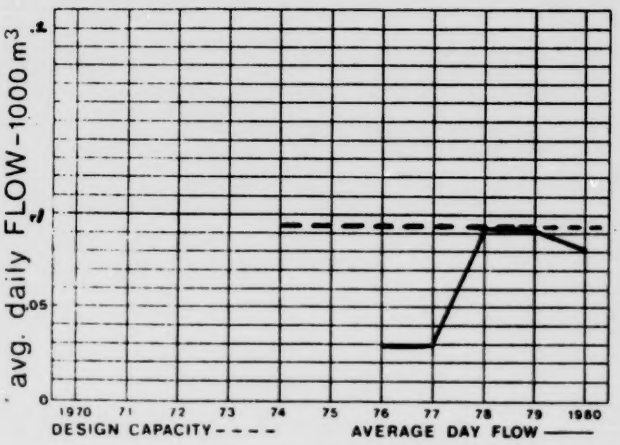
CHLORINATION

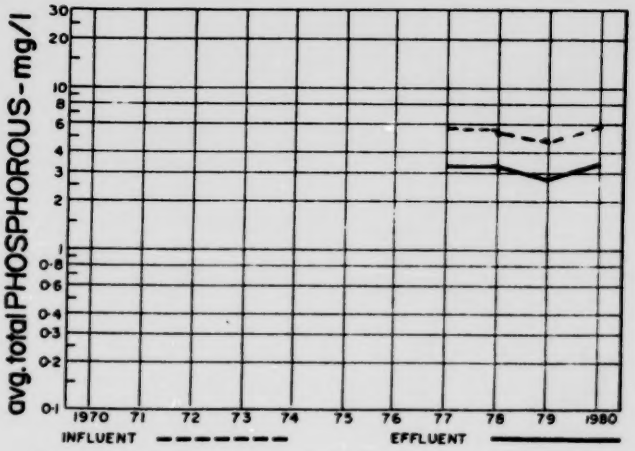
Retention: 30 minutes

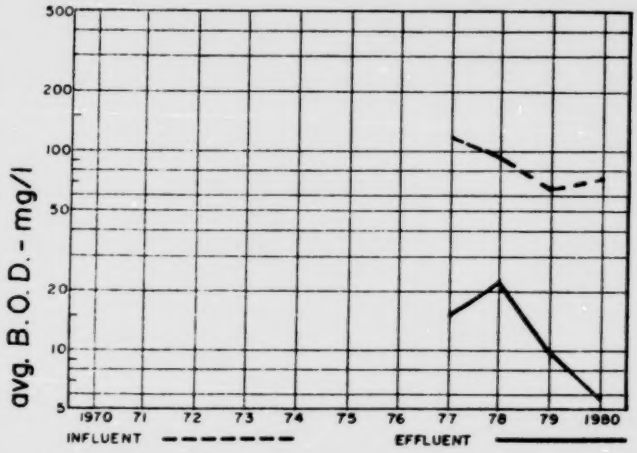
Pumping Station #1
2 pumps @ 100 IGPM @

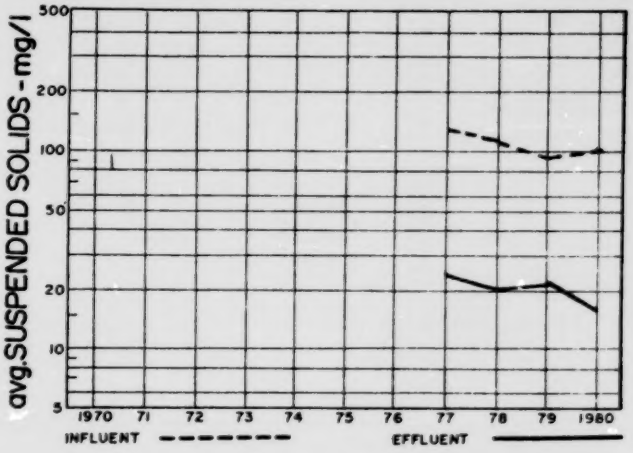
Outfall

To Rideau Canal (Cataraqui River).









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001505 CANA M P C P

MUNICIPALITY : PITTSBURG (CANA)
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 9,702
POPULATION SERVED : 210
PERCENT SERVED : 2.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.095 1000 M3 DESIGN BOD5 : 190.0 MG/L DESIGN SUSP.SOLIDS : 220.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	2.364	.076	.184		86.0	12.0	86	.1	109.0	29.0	73	.1	4.1	3.2	21	.002
FEB	1.481	.051	.057		122.0	18.5	84	.1	156.0	18.1	88	.2	6.4	3.9	39	.004
MAR	3.597	.116	.261		29.0	8.0	72		84.5	13.0	84	.2	6.6	2.4	63	.015
APR	4.826	.161	.424		41.0	3.0	92	.1	41.0	20.0	51	.1	5.6	2.6	53	.014
MAY	1.968	.064	.161		55.0	4.5	91		54.0	11.0	79		7.1	3.4	52	.007
JUN	1.467	.049	.111		68.0	4.2	93		77.0	13.0	83		5.5	4.4	20	.002
JUL	1.302	.042	.160		195.0	1.0	99	.2	285.0	10.0	96	.3	11.2	4.4	60	.009
AUG	1.279	.041	.082		68.0	1.5	97		139.0	10.6	92	.1	7.9	3.7	53	.005
SEP	1.695	.057	.129		93.0	1.2	98	.1	136.0	7.9	94	.2	7.5	4.2	44	.006
OCT	2.539	.082	.297		85.0	2.0	97	.2	70.0	19.0	72	.1	5.8	3.7	36	.005
NOV	2.409	.080			62.5	3.6	94	.1	44.0	11.0	75		3.0	2.8	5	
DEC	4.300	.141			13.0	11.0	15		28.0	47.0	-	-	1.1	1.5	-	-
TOTAL	29.227							1.6				1.8				.069
AVERAGE		.080			76.4	5.8	92		101.9	17.4	82		5.9	3.3	43	
MAXIMUM			.424													
NO. OF SAMPLES					24	24			71	70			22	24		

Ministry of the Environment
Ontario

Northeastern Region

⑤

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

Sault Ste. Marie
445 Albert St. E.
705-949-4640

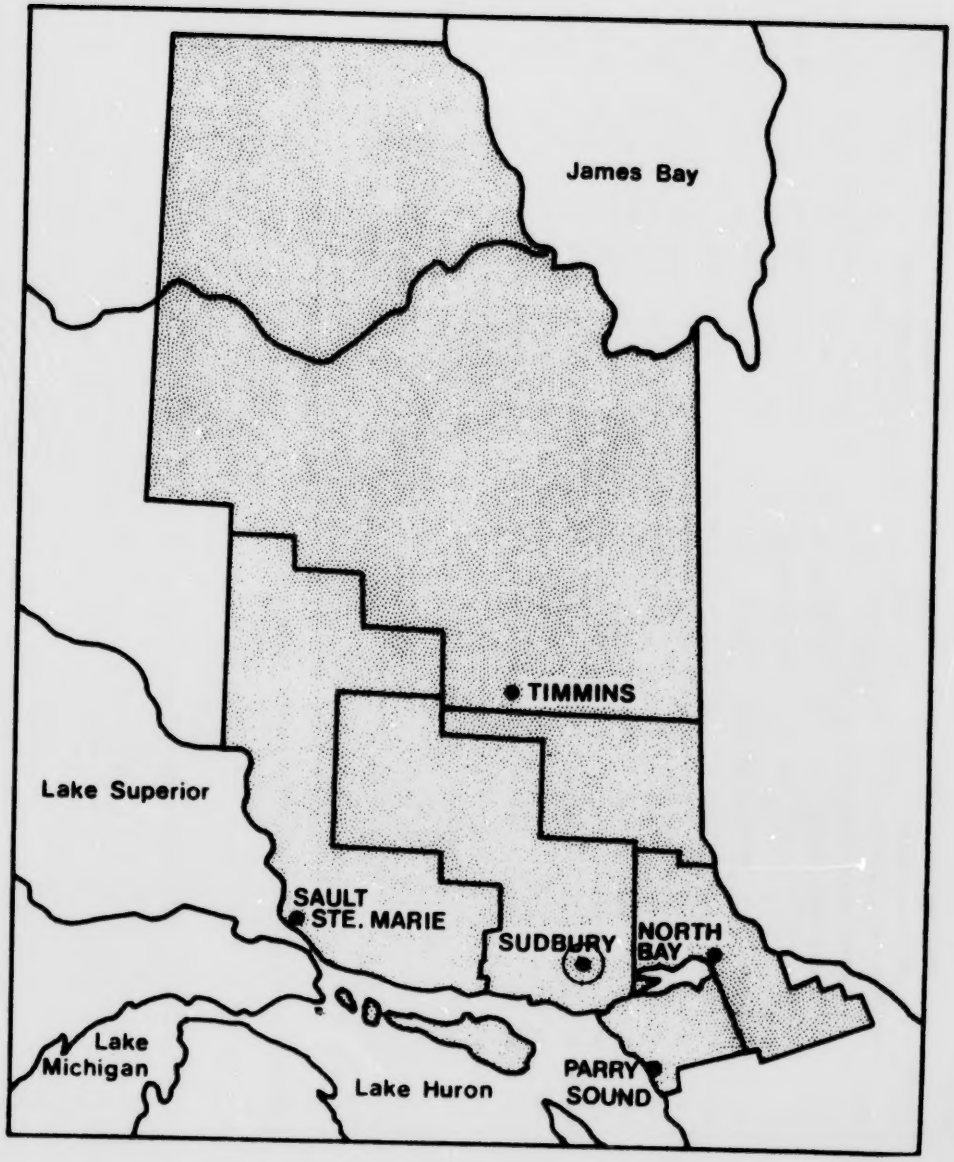
Timmins
83 Algonquin Blvd. W.
705-264-9474

Parry Sound
74 Church St.
705-746-2139

Ministry of the Environment
Ontario

Northeastern Region

⑤



DESIGN DATA - METRIC

BLACK R. - MATHESON (M.)

PROJECT Town of Matheson WPCP

PROJECT NO. 1-0150-68

TREATMENT Extended Aeration

DESIGN FLOW 0.68 $10^3 m^3/d$

SEWAGE PUMPING STATIONS

No. 1 Two (2) submersible pumps 7.6 l/s @ 9.9m TDH

No. 2 Two (2) submersible pumps 34.8 l/s @ 11.3m TDH

No. 3 Two (2) submersible pumps 7.6 l/s @ 11.9m TDH

PRETREATMENT

GRIT REMOVAL
2 grit channels .6m x 4.9m each
Total Volume: $.37m^3$
Retention: 2 weeks

COMMINUTOR
2.5cm Cord Model 10A. .75 kW

SECONDARY TREATMENT

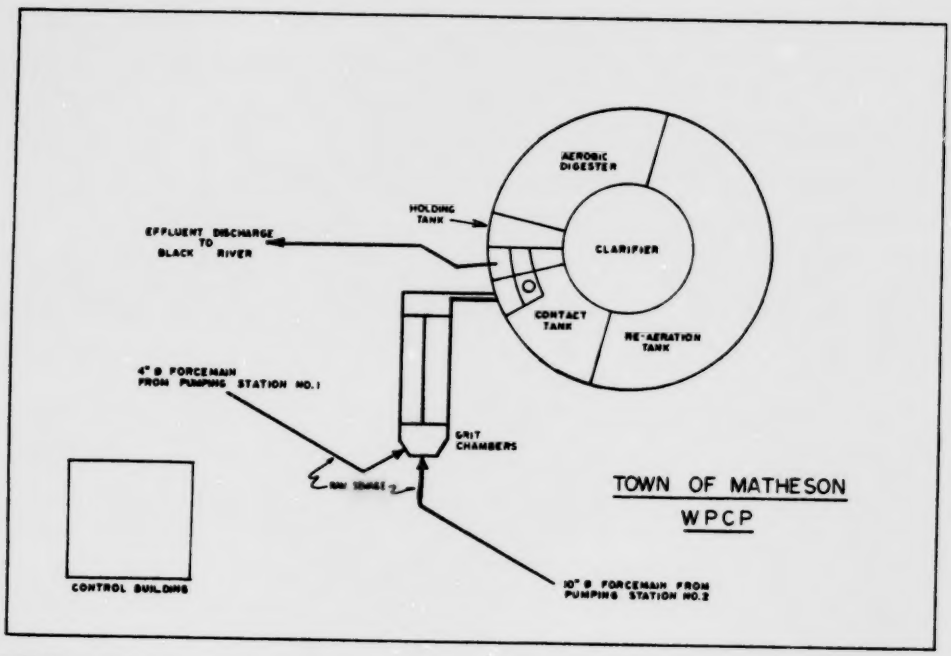
AERATION
Contact Tank Volume: $150.7\ m^3$
Retention: 3.5 hrs.
Reaeration Tank Volume: $395.1 m^3$
Retention: 9.1 hrs.
Aerobic Digester Volume $360.3 m^3$
Retention 14.4 hrs
Total Aeration Volume: $769.8 m^3$
Retention: 27 hrs.

AIR SUPPLY
2 blowers delivering 626.9 l/s
Motors 56 kW @ 3560 r/min. 60A

CLARIFIER
Size: 9.1m dia_3 x 5.6m avg SWD
Volume: $370.5 m^3$
Loading: Surface = $10.4 m^3/m^2 \cdot d$
Weir = $23.8 m^3/m \cdot d$

CHLORINATION

CHLORINE CONTACT TANK
Volume: $22.4 m^3$
Retention: 45 min.



DESIGN DATA - IMPERIAL

PROJECT Town of Matheson WPCP

PROJECT NO. 1-0150-68

TREATMENT Extended Aeration

DESIGN FLOW 0.15 MGD

SEWAGE PUMPING STATIONS

No. 1 Two (2) submersible pumps 100 gpm @ 32.5' T.D.H.

No. 2 Two (2) submersible pumps 460 gpm @ 37.0' T.D.H.

No. 3 Two (2) submersible pumps 100 gpm @ 39.0 T.D.H.

PRETREATMENT

GRIT REMOVAL
2 grit channels 2' x 16' each
Total Volume: 13 cu. ft.
Retention: 2 weeks

COMMINUTOR
10" Cord Model 10A. 1.0 h.p.

SECONDARY TREATMENT

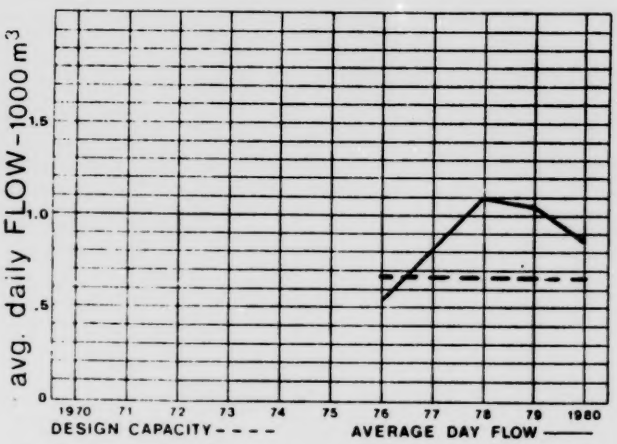
AERATION
Contact Tank Volume: 33,154 gal.
Retention: 3.5 hrs.
Reaeration Tank Volume: 86,914 gal.
Retention: 9.1 hrs.
Aerobic Digester Volume: 79,257 gal.
Retention: 14.4 hrs.
Total Aeration Volume: 169,325 gal.
Retention: 27 hrs.

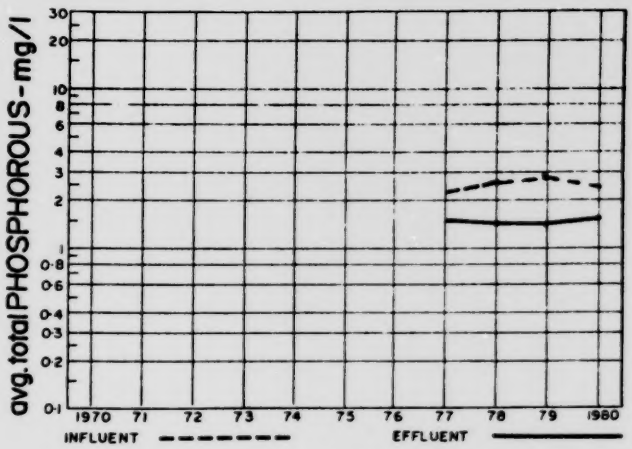
AIR SUPPLY
2 blowers delivering 1500 cfm
Motors: 75 h.p. @ 3560 r.p.m. 60A.

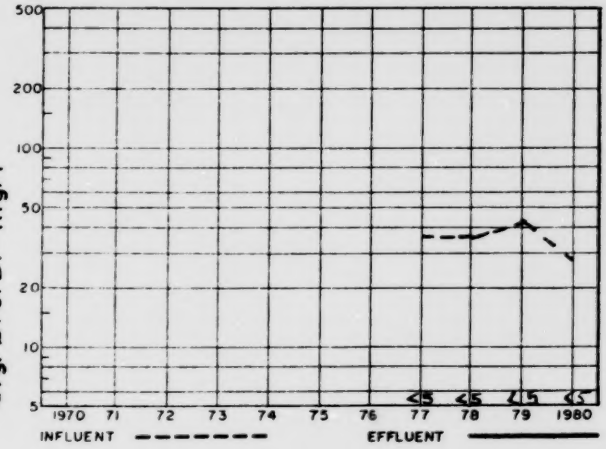
CLARIFIER
Size: 30' dia. x 18.5 avg. SWD
Volume: ±1,500 gal.
Loading: Surface 212 IG/ft^2/day
Weir 1595 IG/ft^2/day

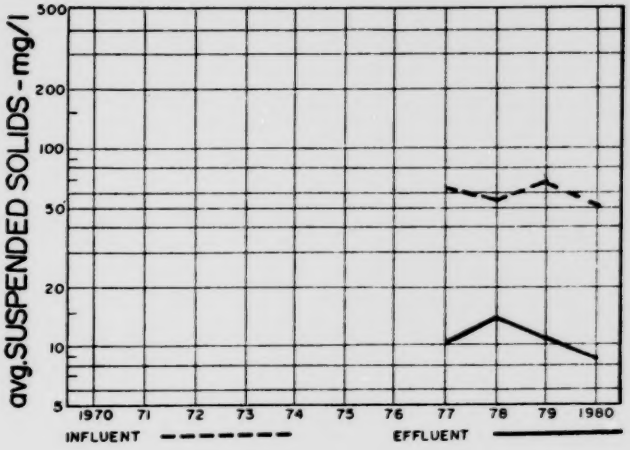
CHLORINATION

CHLORINE CONTACT TANK
Volume: 4873 gal.
Retention: 45 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000025 MATHESON MPCP

MUNICIPALITY : BLACK RIVER - MATHESON
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 3,567
POPULATION SERVED : 920
PERCENT SERVED : 25.7

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.681 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	20.750	.660	.790	1.310	18.5	2.0	89	.3	30.0	*			2.4	1.4	41	.021
FEB	18.410	.630	.710	.860	47.0	4.0	91	.7	62.5	12.0	80	.9	3.1	1.8	41	.024
MAR	24.730	.790	1.050	1.270	18.5	5.2	71	.3	55.0	12.5	77	1.0	2.9	3.5	-	-
APR	40.000	1.330	2.180	3.450	54.0	4.4	91	1.9	50.0	9.0	82	1.6	5.0	.7	86	.172
MAY	33.220	1.070	2.050	3.270	25.5	2.0	92	.7	45.0	5.0	88	1.3	2.1	1.3	35	.025
JUN	27.040	.900	1.510	1.810	26.5	1.9	92	.6	35.0	5.0	85	.8	3.5	1.6	54	.051
JUL	26.830	.860	1.900	3.450	23.3	2.9	87	.5	55.0	13.5	75	1.1	1.8	1.3	25	.012
AUG	27.120	.870	1.630	4.540	10.6	1.4	86	.2	80.0	6.0	92	2.0	4.6	1.5	67	.084
SEP	30.930	1.030	1.860	2.630	44.0	1.9	95	1.3	75.0	7.5	90	2.0	*	*		
OCT	31.570	1.010	1.570	1.810	26.0	4.8	81	.6	37.5	5.0	86	1.0	2.1	1.3	37	.025
NOV	25.150	.830	1.060	1.270	31.0	4.0	87	.6	52.5	8.0	84	1.1	2.4	1.5	37	.023
DEC	23.210	.740	.850	1.090	25.5	7.0	72	.4	32.5	9.0	72	.5	2.4	1.8	26	.015
TOTAL	328.960							8.7				13.6				.452
AVERAGE		.893			29.2	3.4	88		50.8	8.4	83		2.9	1.6	44	
MAXIMUM			2.180	4.540												
NO. OF SAMPLES					23	23			23	20			21	19		

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002416 BLIND RIVER W P C P

MUNICIPALITY : BLIND RIVER
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
EFFLUENT POLISHING

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 3,174
POPULATION SERVED : 3,174
PERCENT SERVED : 100.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.500 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	40.954	1.321	1.805		77.0	2.5	96	3.0	112.5	6.0	94	4.3	6.3	3.0	52	.135
FEB	29.336	1.011	1.091		80.0	4.0	95	2.2	110.0	5.0	95	3.0	6.4	3.8	40	.076
MAR	35.741	1.153	1.914		110.0	4.5	95	3.7	140.0	11.0	92	4.6	6.8	4.2	38	.093
APR	57.718	1.924			38.0	3.2	91	2.0	73.1	7.7	89	3.7	4.0	2.0	50	.115
MAY	47.814	1.542	1.918		28.0	1.4	95	1.2	51.0	5.0	90	2.1	3.3	3.0	9	.014
JUN	41.191	1.373			30.0	.4	98	1.2	42.0	2.7	93	1.6	3.4	3.5	-	-
JUL	36.709	1.184	1.618		50.0	1.0	98	1.7	40.0	4.0	90	1.3	5.9	3.7	37	.081
AUG	42.509	1.371			33.0	2.0	93	1.3	52.0	3.0	94	2.0	5.3	4.0	24	.055
SEP	45.673	1.522	2.332		60.0	2.0	96	2.6	66.1	3.0	95	2.8	2.3	*		
OCT	46.164	1.489			127.0	4.0	96	5.6	50.5	4.2	91	2.1	*	2.7		
NOV	45.859	1.529	1.859		32.0	2.5	92	1.3	44.2	5.9	86	1.7	*	3.2		
DEC	36.541	1.179	1.459		44.0	11.0	75	1.2	44.0	6.0	86	1.3	*	*		
TOTAL	506.209							27.5				31.2				.569
AVERAGE		1.383			59.0	3.2	94		68.7	5.2	92		4.8	3.3	31	
MAXIMUM			2.332													
NO. OF SAMPLES					14	13			57	55			11	11		

DESIGN DATA - METRIC

HAILEYBURY

PROJECT Town of Haileybury WPCP

PROJECT NO. 1-0069-67

DESIGN FLOW 1.6 $10^3m^3/d$

BOD - Raw Sewage 170 mg/l
- Removal 90%

SS - Raw Sewage 200 mg/l
- Removal 90%

TREATMENT: Contact Stabilization

PUMPING STATION

Two - 47.3 l/s @ 18.6m TDH
One Diesel engine

GRIT REMOVAL

Type: Manually cleaned channels
Size: Two

SCREENING

Bar Screen 4.4cm openings

AERATION

Volume: 235.1m^3
Detention: 3.6 hr @ 1.6 $10^3m^3/d$
Diffusers: S & L Aluminum

REAERATION SECTION

Volume: 604.1m^3
Detention: 7.6 hr. @ max. return rate of 1898.4m^3

AEROBIC DIGESTER

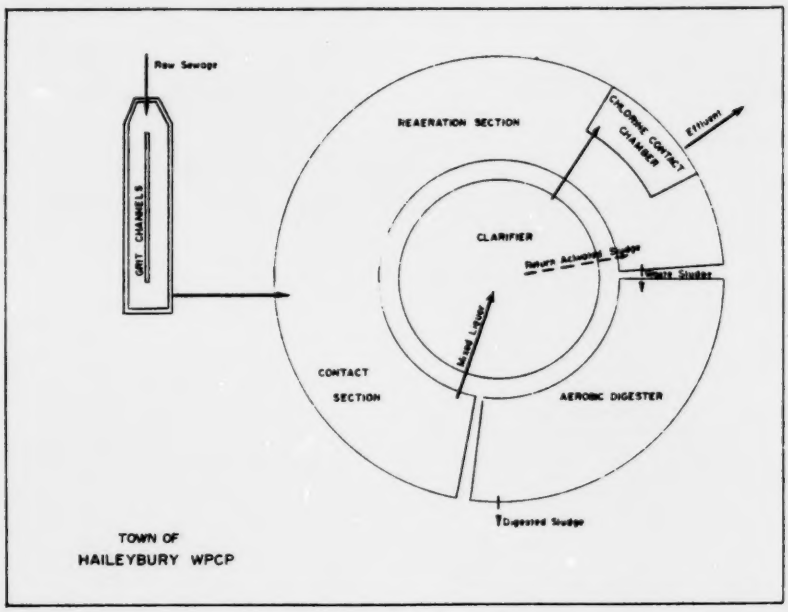
Volume: 424.8m^3
Loading: 0.12m^3/capita

SEDIMENTATION

Volume: 343.2m^3
Detention: 5.7 hr. @ 1591.1m^3
Loading: Surface weir

CHLORINE CONTACT CHAMBER

Volume: 39.1m^3
Detention: 35 min @ 1.6 $10^3m^3/d$



TOWN OF
HAILEYBURY WPCP

DESIGN DATA - IMPERIAL

PROJECT Town of Haileybury WPCP

PROJECT NO.	1-0069-67
DESIGN FLOW	0.350 mgd
BOD - Raw Sewage	170 mg/l
- Removal	90%
SS - Raw Sewage	200 mg/l
- Removal	90%

PUMPING STATION

Two - 625 IGPM @ 61 ft TDH
One Diesel engine

GRIT REMOVAL

Type: Manually cleaned channels
Size: Two

SCREENING

Bar Screen 1 3/4" openings

AERATION

Volume: 8,300 ft^3 or 62,400 gal
Detention: 3.6 hr @ 0.35 mgd
Diffusers: S & L Aluminum

REAERATION SECTION

Volume: 21,330 ft^3 or 132,900 gal
Detention: 7.6 hr @ max. return rate of 417,600 igpd

AEROBIC DIGESTER

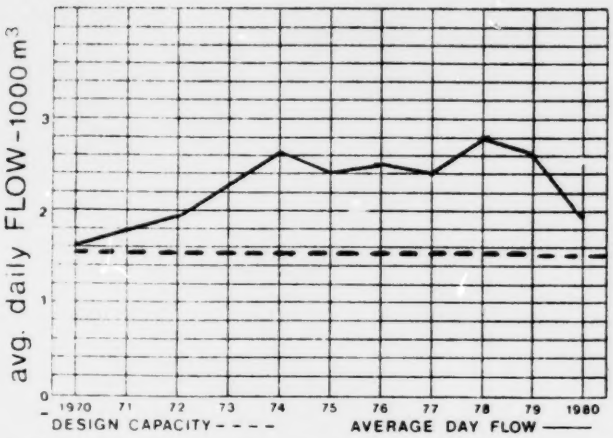
Volume: 15,000 ft^3 or 93,400 gal
Loading: 4.3 ft^3/capita

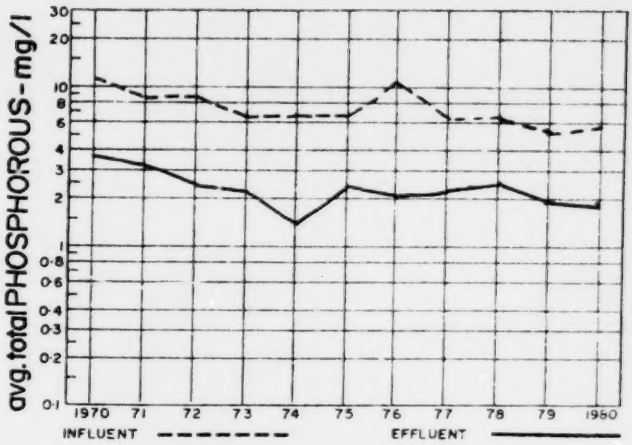
SEDIMENTATION

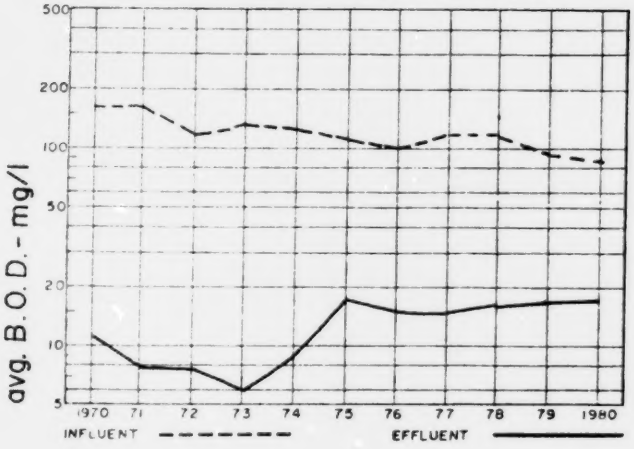
Volume: 12,100 ft^3 or 75,500 gal
Detention: 5.7 hr @ 350,000 igpd
Loading: Surface weir

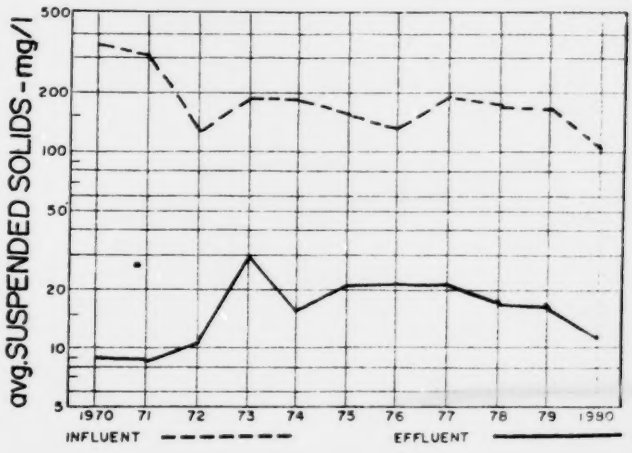
CHLORINE CONTACT CHAMBER

Volume: 9600 gal
Detention: 35 min @ 0.35 mg









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000310 HAILEYBURY MPCP

MUNICIPALITY : HAILEYBURY
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 4,997
POPULATION SERVED : 3,240
PERCENT SERVED : 64.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.591 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	53.500	1.700	2.300	3.900	*	*			*	*			*	*		
FEB	48.800	1.600	1.800	3.900	76.0	10.0	86	3.2	105.0	10.0	90	4.6	6.1	1.4	77	.229
MAR	57.900	1.800	2.600	3.900	82.5	42.0	49	2.3	202.5	5.0	97	11.4	6.9	2.1	69	.278
APR	90.100	3.000	3.800	3.900	92.0	27.0	70	5.8	128.0	19.0	85	9.8	3.7	1.7	54	.180
MAY	68.800	2.200	2.900	3.900	88.0	4.0	95	5.7	130.0	8.0	93	8.3	8.3	1.8	78	.447
JUN	49.300	1.640	2.200	3.900	69.0	16.0	76	2.6	125.0	15.0	88	5.4	4.2	1.9	54	.113
JUL	49.000	1.600	2.300	3.900	97.0	17.0	82	3.9	85.0	12.0	85	3.5	6.7	2.2	67	.221
AUG	50.120	1.600	2.400	3.900	*	*			*	*			*	*		
SEP	53.300	1.770	2.800	3.900	110.0	21.5	80	4.7	123.0	10.0	91	6.0	7.9	2.4	69	.293
OCT	68.590	2.212			92.5	17.0	81	5.1	87.5	24.0	72	4.3	4.6	1.6	65	.206
NOV	70.022	2.334			84.0	12.0	85	5.0	95.0	12.0	87	5.8	4.9	2.8	42	.147
DEC	52.125	1.681			55.0	11.0	80	2.2	85.0	6.5	92	4.0	5.4	1.1	79	.224
TOTAL	711.557							40.9				63.5				2.338
AVERAGE		1.928			84.6	17.7	79		116.6	12.1	89		5.8	1.9	67	
MAXIMUM			3.800	3.900												
NO. OF SAMPLES					16	14			16	14			16	16		

DESIGN DATA - METRIC

IROQUOIS FALLS

PROJECT Town of Iroquois Falls

PROJECT NO. 1-0096-67

TREATMENT Contact Stabilization
Prefabricated Package Plant
Dorr Oliver - Long. 2 units.

DESIGN FLOW 4.1 $10^3 m^3/d$

DESIGN POPULATION 7150

PRETREATMENT

GRIT REMOVAL
2 channels

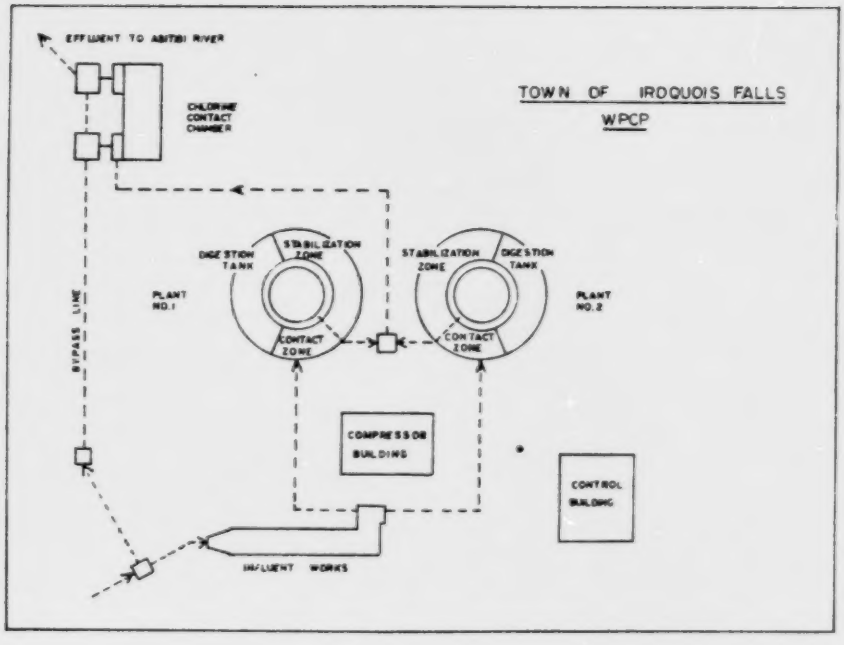
COMMINUTION
1 Comminutor and bypass channel
with manually cleaned screen.

SECONDARY TREATMENT
Total contact tank aeration volume: 493.6m^3
Detention: 2.9 hrs.
Total reaeration tank volume: 987.4m^3
Detention (Based on 100% return): 5.8 hrs.
Aerobic Digester Volume: 888.3 m^3

AIR SUPPLY
3 blowers @ 386.6 l/s and 55.9 kW

CLARIFIER
Two clarifiers 14.2m dia. and 4.0m swd
Surface overflow rate: 13.0 m^3/m^2-d

CHLORINATION
Chlorine contact tank volume: 886.5m^3
Detention: 30 min.



DESIGN DATA - IMPERIAL

PROJECT Town of Iroquois Falls

PROJECT NO. 1-0096-67

TREATMENT
Prefabricated Package Plant
Dorr Oliver - Long. 2 units.

DESIGN FLOW 0.9 MGD

DESIGN POPULATION 7150

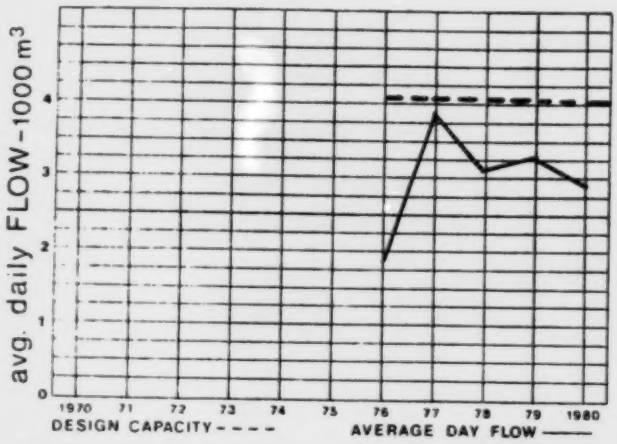
PRETREATMENT

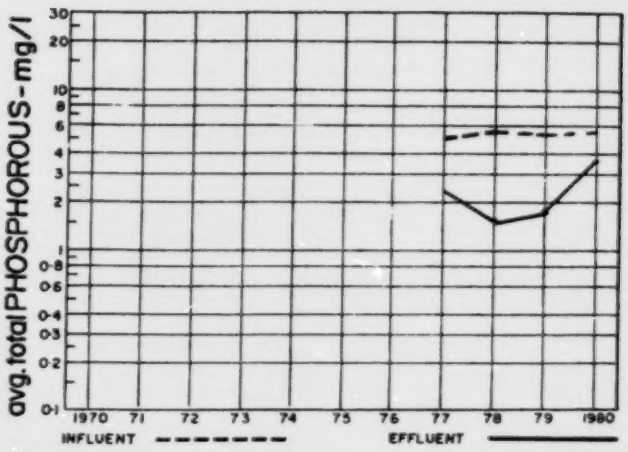
GRIT REMOVAL
2 channels
COMMINUTION
1 Comminutor and bypass channel
with manually cleaned screen.

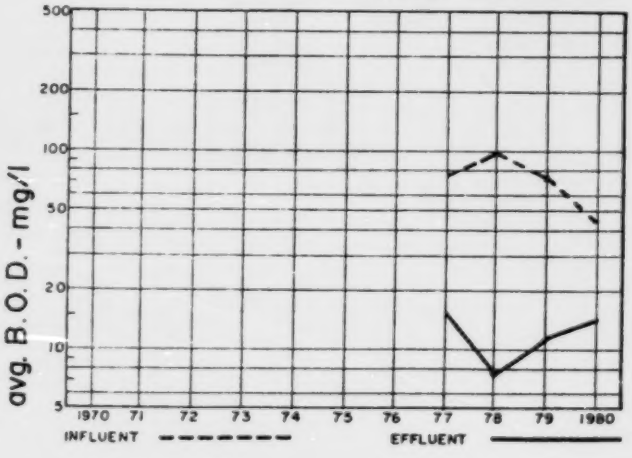
SECONDARY TREATMENT
Total contact tank aeration volume: 17430 ft^3
Detention: 2.9 hrs.
Total reaeration tank volume: 34,866 ft^3
Detention (Based on 100% return): 5.8 hrs.
Aerobic Digester Volume: 31,366 ft^3

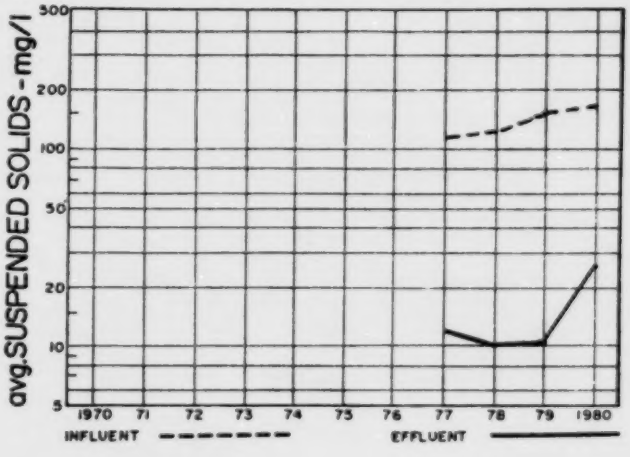
AIR SUPPLY
3 blowers @ 925 cfm and 75 h.p.
CLARIFIER
Two clarifiers 46.5 ft. dia. and 13.0 ft. SWD
Surface overflow rate: 265 gal/ft^2/day.

CHLORINATION
Chlorine contact tank volume: 19,500 gal.
Detention: 30 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002121 IROQUOIS FALLS MPCP

MUNICIPALITY : IROQUOIS FALLS
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 4,481
POPULATION SERVED : 4,100
PERCENT SERVED : 94.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.091 1000 M3 DESIGN BOD5 : 155.0 MG/L DESIGN SUSP.SOLIDS : 160.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	61.180	1.970	2.380	8.180	*	*			268.0	5.0	98	16.0	*	*		
FEB	55.760	1.920	2.170	5.910	*	*			159.0	3.9	97	8.6	*	*		
MAR	56.870	1.830	2.250	5.000	*	*			256.0	39.3	84	12.3	*	*		
APR	148.010	4.930	8.720	9.090	35.0	20.0	42	2.2	182.5	5.8	96	26.1	4.1	1.9	53	.326
MAY	118.030	3.800	6.670	9.090	*	*			231.0	38.0	83	22.7	*	*		
JUN	88.910	2.960	4.870	9.090	31.0	9.0	70	1.9	119.0	11.0	90	9.6	4.7	4.6	2	.009
JUL	100.190	3.230	7.490	9.540	*	*			76.0	13.0	82	6.3	*	*		
AUG	93.130	3.000	4.060	9.540	46.0	12.0	73	3.1	30.0	101.0	-	-	3.8	3.6	5	.019
SEP	100.620	3.350	7.310	9.540	*	*			156.0	15.0	90	14.1	*	*		
OCT	103.660	3.340	6.100	10.450	*	*			187.0	8.0	95	18.5	*	*		
NOV	76.910	2.560	3.310	6.360	80.0	28.0	65	3.9	140.5	40.0	71	7.7	6.5	4.1	36	.185
DEC	67.700	2.180	2.440	5.450	30.0	2.4	92	1.8	250.0	48.0	80	13.6	8.2	4.7	42	.237
TOTAL	1070.970							13.2				184.0				.776
AVERAGE		2.923			44.4	14.2	67		171.2	27.3	84		5.4	3.7	30	
MAXIMUM			8.720	10.450												
NO. OF SAMPLES					5	5			39	36			5	5		

DESIGN DATA - METRIC

PROJECT: Town of Kirkland Lake WPCP
PROJECT NO: 1-0248-70
TREATMENT: Contact Stabilization
DESIGN FLOW: 13.638 $10^3 m^3/d$

PRETREATMENT

SCREENING
Type: One mechanical screen
Size: 27.28 $10^3 m^3/d$

AERATED GRIT TANK
Size: 27.28 $10^3 m^3/d$

RAW SEWAGE PUMPS
Type: Five, SMART TURNER GMPS
Size: 543.3 l/s (each) at 10.67m TDH

HOLDING TANK
Size: 1.16 $10^3 m^3$

BIOLOGICAL TREATMENT

CONTACT TANK
Size: 15.2m dia. x 4.57m swd
Volume: 836.46 m^3
Retention: 1.5 hr.
Aerator Type: Mechanical

KIRKLAND LAKE

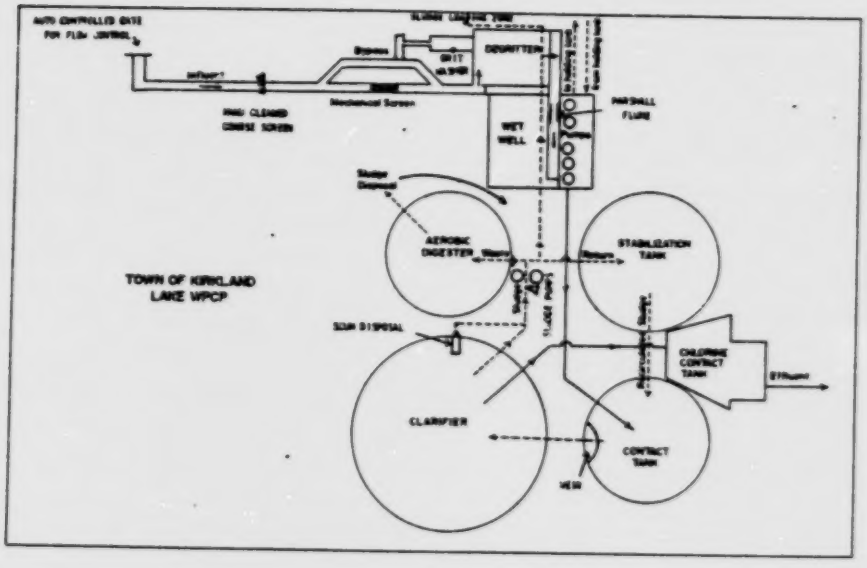
CLARIFIER
Size: One, 24.38m dia. x 3.05m swd
(1427.4m^3)
Retention: 2.5 hrs.
Loading: Surface 32.76 $m^3/m^2.d$
Weir 94.62 m^3/m

SLUDGE STABILIZATION
Size: One 189.47m dia. x 4.51m swd
Volume: 1060.13 m^3

Aerator: Mechanical

CHLORINE TANK
Size: One, irregular shape 4.45 swd
Volume: 195.83 m^3
Retention: 21 min.

AEROBIC DIGESTER
Size: One, 15.24m dia. x 5.63m swd
Volume: 1031.94 m^3



DESIGN DATA - IMPERIAL

PROJECT
Town of Kirkland Lake WPCP

PROJECT NO.
1-0248-70

TREATMENT:
Contact Stabilization

DESIGN FLOW:
3.0 mgd

PRETREATMENT

SCREENING
Type: One mechanical screen
Size: 6.0 mgd max.

AERATED GRIT TANK
Size: 6.0 mgd

RAW SEWAGE PUMPS
Type: Five, SMART TURNER GMPS
Size: 1990 cfm (each) @35' TDH

HOLDING TANK
Size: 0.25 MG

BIOLOGICAL TREATMENT

CONTACT TANK
Size: One 50' dia. x 15' swd
(184,000 I.G.)
Retention: 1.5 hr
Aerator Type: Mechanical

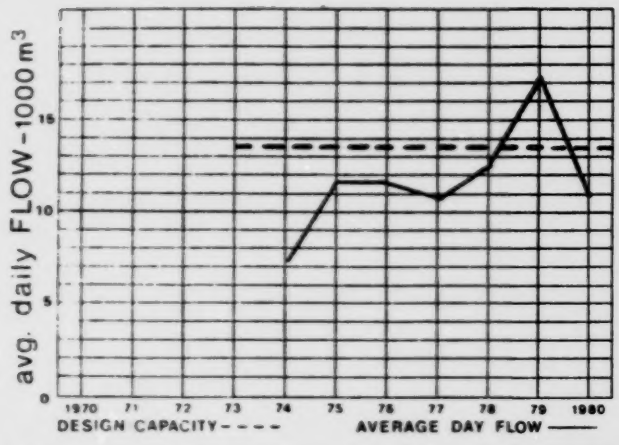
CLARIFIER
Size: One, 80' dia. x 10' swd
(314,000 I.G.)
Retention: 2.5 hr
Loading: Surface 670 gal/ft^2/day
Weir 6350 gal/ft

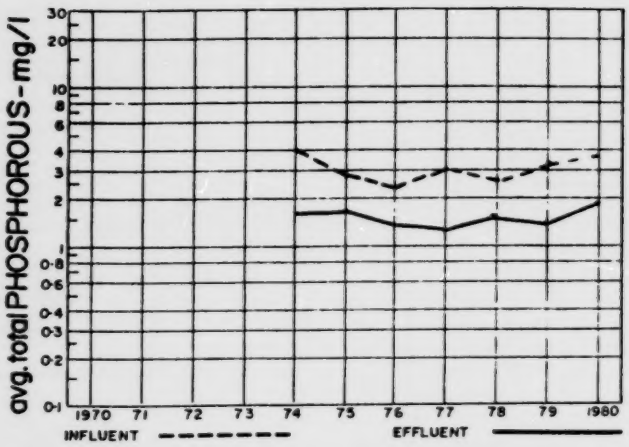
SLUDGE STABILIZATION
Size: One, 56' dia. x 15' swd
(231,000 I.G.)

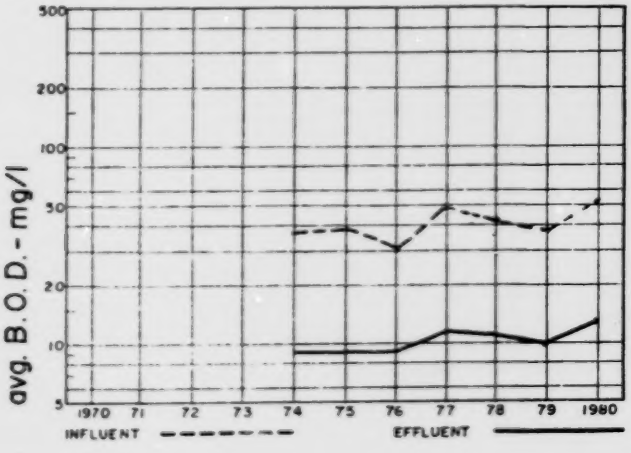
Aerator: Mechanical

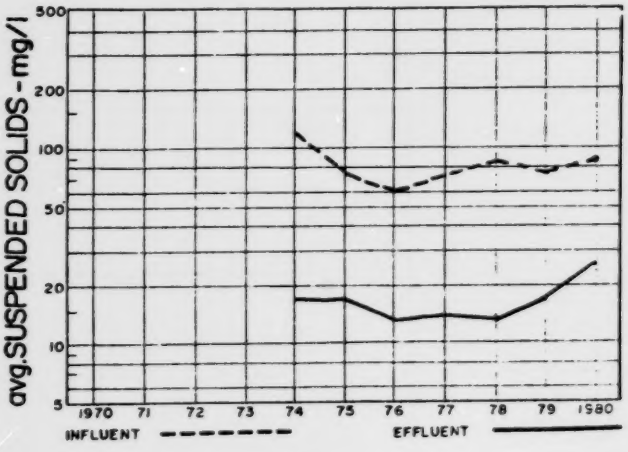
CHLORINE TANK
Size: One, irregular shape 14.6' swd
(43,077 I.G.)
Retention: 21 min.

AEROBIC DIGESTER
Size: One, 50' dia. x 18.5' swd
(227,000 I.G.)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120000015 MUNICIPAL PLANT

MUNICIPALITY : KIRKLAND LAKE
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 12,768
POPULATION SERVED :
PERCENT SERVED :

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 13.638 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/80-DEC/80																
JAN	404.880	13.060	19.050	33.190	*	*			*	*			*	*		
FEB	379.390	13.080	15.590	34.550	40.0	10.0	75	11.3	55.0	5.0	90	18.9	3.2	.5	83	1.017
MAR	433.400	13.980	18.950	36.600	37.0	18.5	50	8.0	62.5	37.5	40	10.8	3.8	2.1	45	.758
APR	554.410	18.480	29.700	50.000	30.0	16.0	46	7.7	48.0	31.0	35	9.4	2.4	.8	66	.887
MAY	385.400	12.430	20.230	50.000	39.0	24.0	38	5.7	57.0	24.0	57	12.7	4.8	1.6	66	1.233
JUN	260.000	8.650	12.040	21.370	69.0	7.5	89	15.9	110.0	19.0	82	23.6	3.6	1.1	67	.629
JUL	230.840	7.450	9.270	23.180	61.0	4.8	92	12.9	108.0	20.0	81	20.3	4.7	1.9	59	.642
AUG	256.750	8.280	11.420	25.910	78.0	5.0	93	18.7	60.0	15.0	75	11.5	*	5.8		
SEP	274.600	9.150	14.280	29.090	44.0	18.0	59	7.1	130.0	55.0	57	20.5	3.8	4.0	-	-
OCT	302.680	9.760	16.250	25.460	74.7	10.0	86	19.5	105.0	35.0	66	21.1	4.4	.7	83	1.111
NOV	239.900	8.000	10.210	40.910	85.0	16.8	80	16.3	110.0	15.0	86	22.7	3.7	1.2	67	.607
DEC	320.920	10.350	16.230	32.280	42.0	30.0	28	3.8	85.0	33.5	60	16.5	3.9	2.0	48	.610
TOTAL	4043.170							127.5				188.5				7.494
AVERAGE		11.056			54.5	14.6	73		84.5	26.3	68		3.8	1.9	48	
MAXIMUM			29.700	50.000												
NO. OF SAMPLES					20	21			20	21			19	21		

DESIGN DATA - METRIC

LATCHFORD

PROJECT: Town of Latchford WPCP

PROJECT NO: 2-0140-68

TREATMENT: Extended Aeration

DESIGN FLOW: 0.341 $10^3m^3/d$

DESIGN BOD: 200.0 mg/l

DESIGN SS: 233.0 mg/l

GRIT CHANNELS
Two

COMMINUTOR

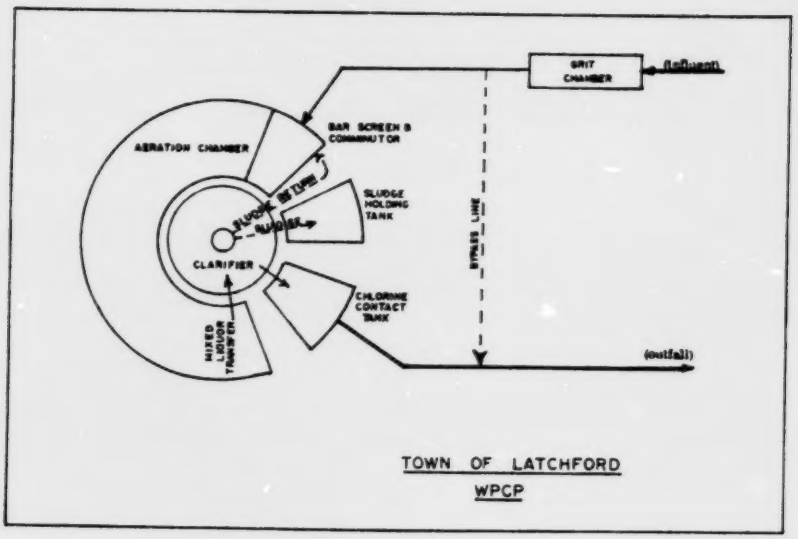
AERATION TANK
Volume: 331.86 m^3
Retention: 23.4 hr.

BLOWERS
Three, each 52.24 l/s @ 37.92 kPa

CLARIFIER
Size: One
Volume: 71.37m^3
Retention: 5.0 hr

SLUDGE HOLDING TANK
Volume: 11.092 m^3

CHLORINE CONTACT CHAMBER
Volume: 7.205 m^3
Retention: 30 min.



TOWN OF LATCHFORD
WPCP

DESIGN DATA - IMPERIAL

PROJECT: Town of Latchford WPCP

PROJECT NO: 2-0140-68

TREATMENT: Extended Aeration

DESIGN FLOW: .075 MIGD

DESIGN BOD: 200.0 mg/l

DESIGN S.S. 233.0 mg/l

GRIT CHANNELS
Two

COMMINUTOR

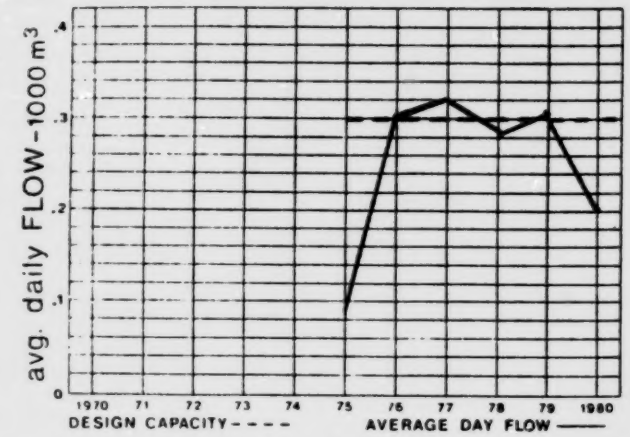
AERATION TANK
Volume: 73,000 IG
Retention: 23.4 hr

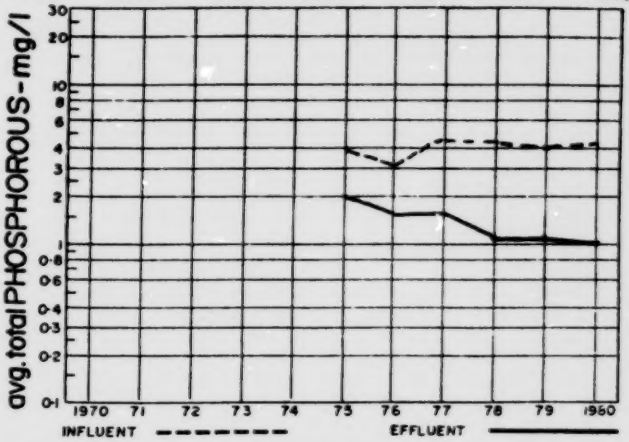
BLOWERS
Three, each 125 cfm @ 5½ psi

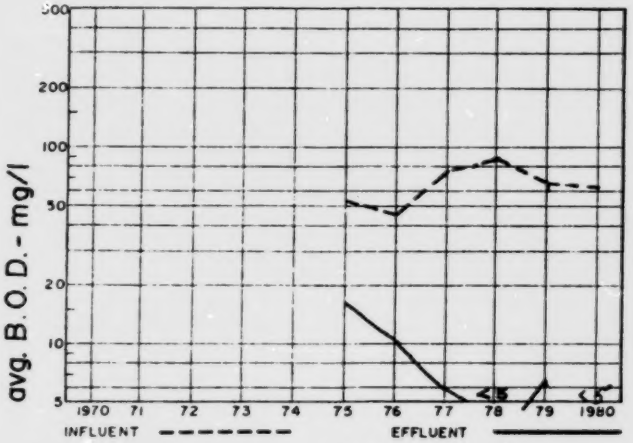
CLARIFIER
Size: One
Volume: 15,700 IG
Retention: 5.0 hr

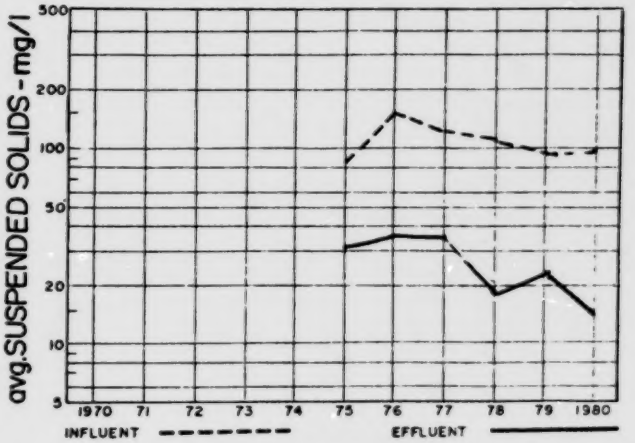
SLUDGE HOLDING TANK
Volume: 2440 IG

CHLORINE CONTACT CHAMBER
Volume: 1585 IG
Retention: 30 min









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001774 LATCHFORD MPCP

MUNICIPALITY : LATCHFORD
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 456
POPULATION SERVED : 428
PERCENT SERVED : 93.8

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

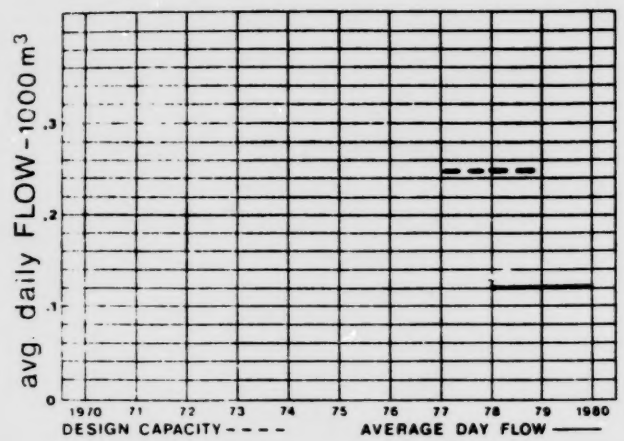
DESIGN CAPACITY : 0.340 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 233.0 MG/L

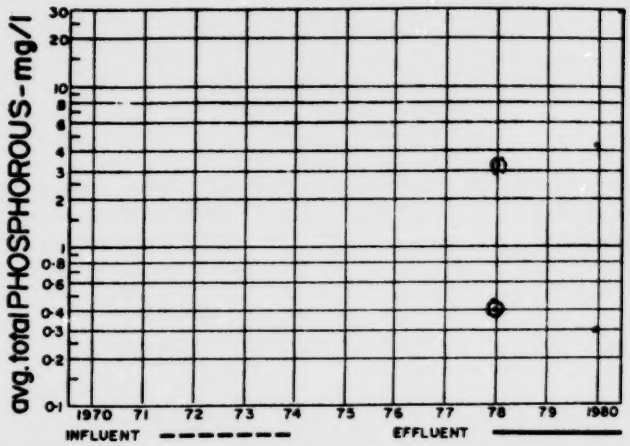
	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	8.277	.267	.405	1.960	58.0	6.5	88	.4	68.0	37.5	44	.2	3.9	1.4	64	.021
FEB	7.232	.249	.360	1.960	73.5	3.5	95	.5	178.0	17.5	90	1.1	3.8	.6	84	.024
MAR	8.815	.284	.401	1.960	61.0	6.0	90	.4	90.0	12.0	86	.6	3.4	.5	85	.026
APR	9.647	.322	.414	1.960	78.0	3.7	95	.7	72.0	13.3	81	.5	3.5	.5	85	.029
MAY	7.942	.256	.349	1.960	48.0	3.0	93	.3	65.0	12.5	80	.4	3.1	.7	77	.019
JUN	5.720	.191	.251	1.960	45.0	1.6	96	.2	67.5	5.0	92	.3	2.4	.7	68	.010
JUL	5.148	.166	.226	1.960	72.5	2.0	97	.3	110.0	10.0	90	.5	5.2	1.2	76	.021
AUG	5.514	.178	.260	1.960	62.0	2.1	96	.3	150.0	12.5	91	.7	7.6	1.6	78	.033
SEP	5.625	.188	.229	1.960	112.5	3.0	97	.6	92.5	12.0	87	.4	5.4	1.3	75	.023
OCT	6.009	.190	.232	1.960	21.7	2.3	89	.1	80.0	30.0	62	.3	5.2	1.8	65	.021
NOV	5.595	.187	.264	1.960	56.0	2.0	96	.3	97.5	7.0	92	.5	1.8	1.2	28	.003
DEC	6.247	.202	.344	1.960	*	*			*	*			*	*		
TOTAL	81.771							4.4				5.9				.230
AVERAGE		.223			62.5	3.2	94		97.3	15.3	84		4.1	1.0	74	
MAXIMUM			.414	1.960												
NO. OF SAMPLES					21	21			21	20			23	22		

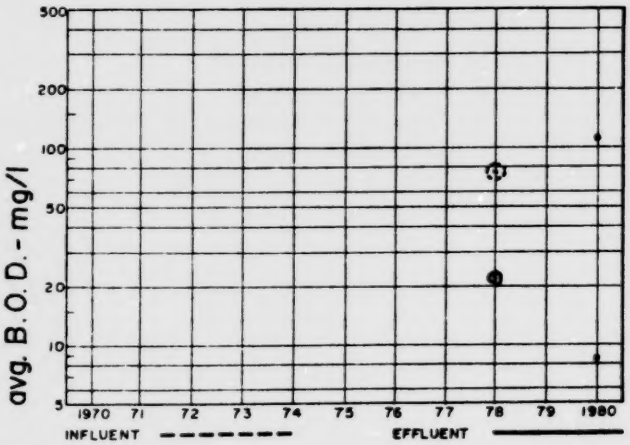
MOOSONEE (NORTH)

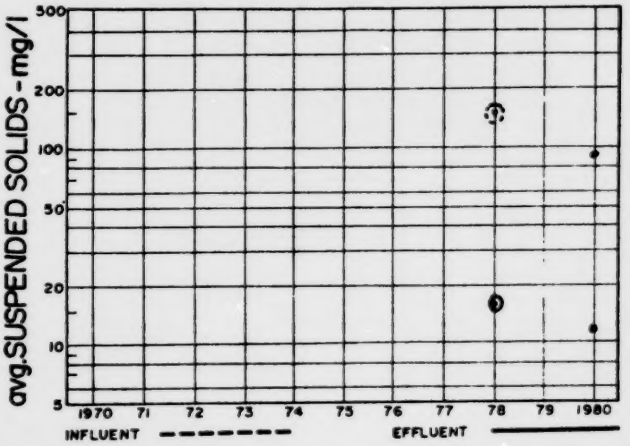
D.A.B.

MOOSONEE (NORTH)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120000319 MOOSONEE D.A.B.(NORTH)

MUNICIPALITY : MOOSONEE (NORTH)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 1,327
POPULATION SERVED :
PERCENT SERVED :

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 0.250 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	3.372	.108	.132		*	*			*	*			*	*		
FEB	3.055	.105	.119		*	*			*	*			*	*		
MAR	3.376	.109	.131		*	*			*	*			*	*		
APR	3.136	.105	.118		*	*			*	*			*	*		
MAY	3.399	.110	.129		20.0	2.0	90		65.0	10.0	84	.1	2.3	.4	81	.006
JUN	3.266	.108	.152		14.0	3.0	78		65.0	10.0	84	.1	2.8	.2	92	.008
JUL	4.415	.142	.147		75.0	22.0	70	.2	80.0	14.0	82	.2	2.5	.2	89	.010
AUG	3.515	.113	.030		*	*			*	*			*	*		
SEP	3.634	.121	.141		370.0	3.5	99	1.3	150.0	15.0	90	.4	9.0	.4	95	.031
OCT	4.241	.137	.163		*	*			*	*			*	*		
NOV	5.104	.170	.196		*	*			*	*			*	*		
DEC	5.251	.169	.217		*	*			*	*			*	*		
TOTAL	45.764							1.6				1.1				.055
AVERAGE		.125			119.7	7.6	93		90.0	12.2	86		4.1	.3	92	
MAXIMUM			.217													
NO. OF SAMPLES					4	4			4	4			4	4		

MOOSONEE (OLD TOWNSITE)

DESIGN DATA - METRIC

PROJECT Moosonee WPCP

PROJECT NO. 1-0002-66

TREATMENT Extended Aeration

DESIGN POPULATION 1,500

DESIGN FLOW .51 $10^3 m^3/d$

BOD - Raw Sewage - 254 mg/l
- Removal - 90%

SS - Raw Sewage - 286 mg/l
- Removal - 85%

PRELIMINARY TREATMENT

Comminution

Type: Chicago Pump Model 7B

CONTACT STABILIZATION

Contact Zone

Size: 2.7m x 3.4m x 3.7m
Volume: $33.6m^3$
Retention: 1.6 hr.

Recreation Zone

Size: 16.9m x 3.4m x 3.7m
Volume: $207.8m^3$
Retention: 9.8 hr.

Air Supply

Type: Hoffman
Size: Two, 130.4 l/s

Diffusers

Type: Shearfusers
Spacing: 22/tank @ 61.0cm centres

Sedimentation

Type: Smith & Loveless
Size: Two, $92.3m^3$
Retention: 4.3 hr
Loading: Surface 14.9 $m^3/m^2.d$
Weir 49.8 $m^3/m.d$

CHLORINATION

Type: Hypochlorination
W & T A & S

Chlorine Contact Chamber

Size: 9.1 m^3
Retention: 26 min.

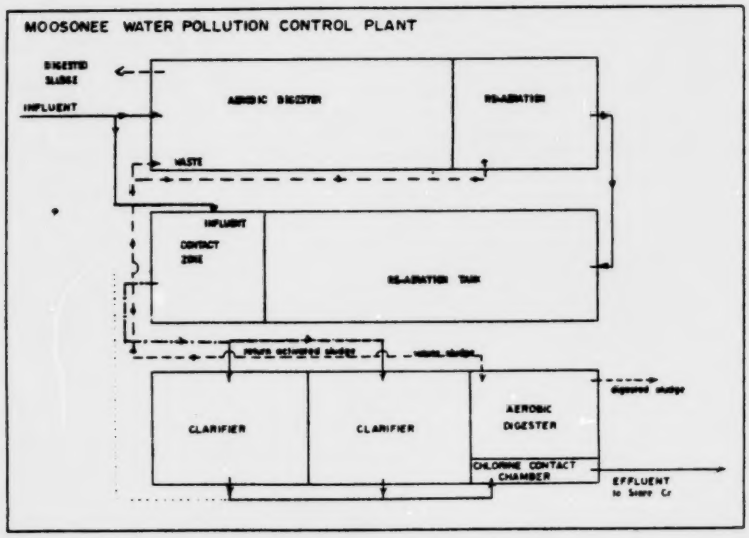
SLUDGE HANDLING

Digestion System - Aerobic

Size: One, $31.6m^3$
One, 97.3m

OUTFALL

To Store Creek



DESIGN DATA - IMPERIAL

PROJECT Moosonee WPCP

PROJECT NO. 1-0002-66

TREATMENT EXTENDED AERATION

DESIGN FLOW 0.112 MIGD

DESIGN POPULATION 1,500

BOD - Raw Sewage - 254 mg/l
- Removal - 90 %

SS - Raw Sewage - 286 mg/l
- Removal - 85 %

PRELIMINARY TREATMENT

Comminution

Type: Chicago Pump Model 7B

CONTACT STABILIZATION

Contact Zone

Size: 9' x 11' x 12'
Volume: 7400 gal.
Retention: 1.6 hr.

Recreation Zone

Size: 55.5' x 11' x 12'
Volume: 45,700 gal.
Retention: 9.8 hr.

Air Supply

Type: Hoffman
Size: Two, 312 cfm

Diffusers

Type: Shearfusers
Spacing: 22/tank @ 24" centres

Sedimentation

Type: Smith & Loveless
Size: Two, 20,300 gal.
Retention: 4.3 hr.
Loading: Surface 304 gal/ft^2/day
Weir 3343 gal/ft/day

CHLORINATION

Type: Hypochlorination
W & T A&S&

Chlorine Contact Chamber

Size: 2000 gal.
Retention: 26 min.

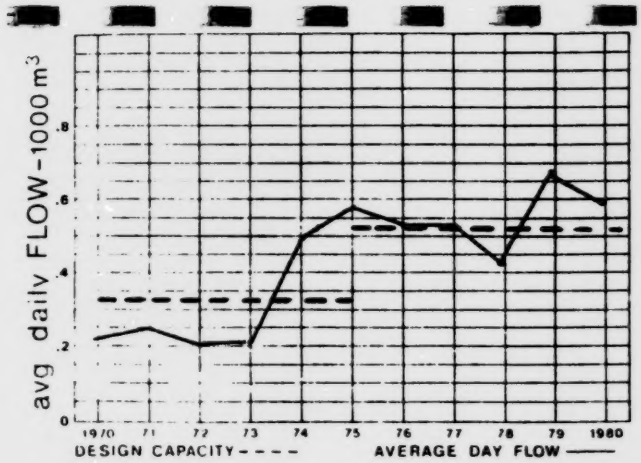
SLUDGE HANDLING

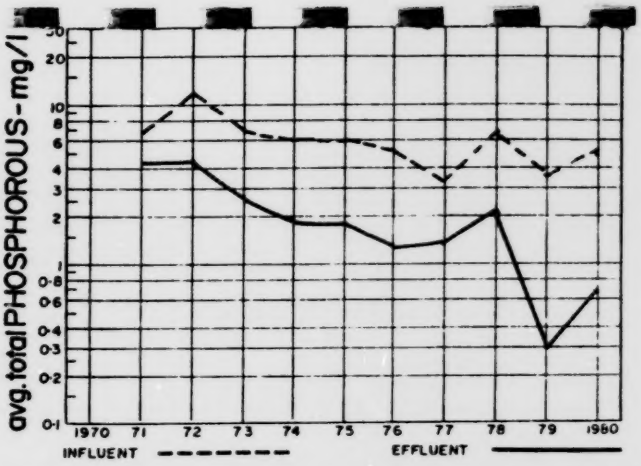
Digestion System - Aerobic

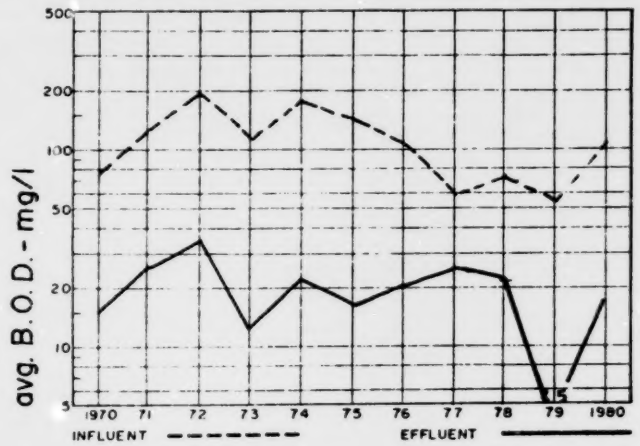
Size: One, 6980 gal.
One, 21,400 gal.

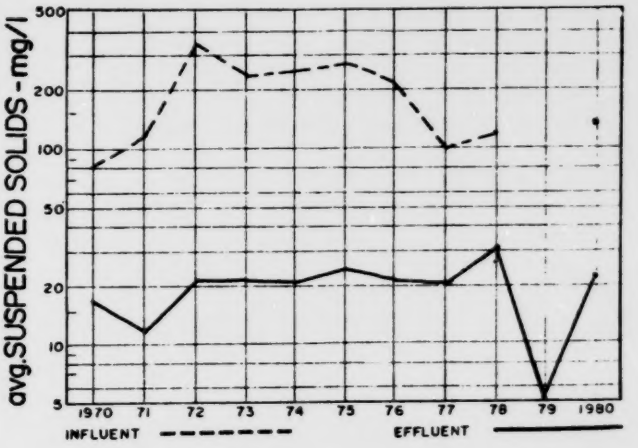
OUTFALL

To Store Creek









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001060 MOOSONEE D.A.B.(OLD TOWNSITE)

MUNICIPALITY : MOOSONEE DEV'L AREA BD
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 1,327
POPULATION SERVED : 1,200
PERCENT SERVED : 90.4

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.509 1000 M3 DESIGN BOD5 : 254.0 MG/L DESIGN SUSP.SOLIDS : 286.0 MG/L

	<— FLOW DATA —>				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	23.031	.743	1.159		*	*			*	*			*	*		
FEB	19.542	.674	.890		*	*			*	*			*	*		
MAR	17.010	.548	.735		*	*			*	*			*	*		
APR	20.770	.692	.962		*	*			*	*			*	*		
MAY	19.850	.640	.881		80.0	30.0	62	.9	245.0	40.0	83	4.0	3.5	1.1	68	.048
JUN	17.578	.586	.898		34.0	8.5	75	.4	100.0	20.0	80	1.4	3.8	.6	84	.056
JUL	18.304	.590	.789		32.0	5.0	84	.4	40.0	20.0	50	.3	1.5	*		
AUG	17.208	.555	.740		*	*			*	*			*	*		
SEP	17.885	.596	.781		195.0	25.0	87	3.0	160.0	15.0	90	2.5	8.8	.6	93	.147
OCT	18.436	.595	.800		195.0	25.0	87	3.1		15.0			8.8	.6	92	.151
NOV	14.738	.491	.773		*	*			*	*			*	*		
DEC	14.802	.477	.774		*	*			*	*			*	*		
TOTAL	219.154							8.1				8.4				.402
AVERAGE		.599			107.2	18.7	82		136.2	22.0	83		5.2	.7	86	
MAXIMUM			1.159													
NO. OF SAMPLES					5	5			4	5			5	4		

DESIGN DATA - METRIC

RAYSIDE-BALFOUR (AZILDA)

PROJECT: Rayside - Balfour
Azilda WPCP

PROJECT NO: 1-0108-67

TREATMENT: Extended Aeration

DESIGN FLOW: 1.51× $10^3 m^3/d$

BRABANT CREEK P.S.
Type: Two, Crane-Deming
Size: each 128.69 l/s @ 20.12m TDH

PRINCIPAL ST. P.S.
Type: Two Allis-Chalmers
Size: each 2031.80 l/s @ 21.34m TDH

GRIT CHANNELS
Size: Three, each 10.44m x 0.61m x 0.88m
Volume: (total) 16.91m^3
Retention: (total) 8.6 min

COMMINUTOR
Type: Cord
Size: 406.4 mm

AERATION TANK
Volume: 2071.93 m^3
Retention: 17.3

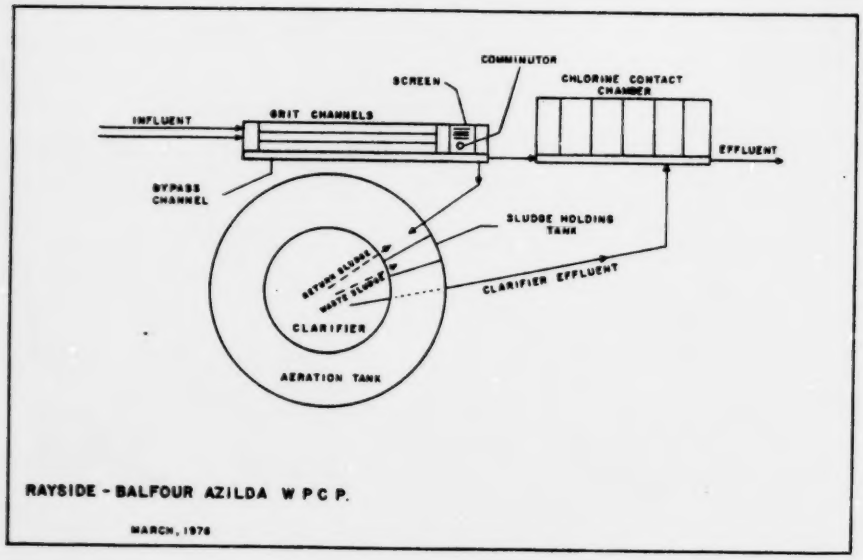
CLARIFIER
Size: 17.37m dia.
Volume: 935.567 m^3
Retention: 7.5 hr
Loading:
- Surface 11.978 $m^3/m^2 \cdot d$
- Weir 52.031 $m^3/m \cdot d$

BLOWERS
Type: Two Hoffmann 38407
Size: 702.07 l/s

SLUDGE HOLDING TANK
Volume: 85.01 m^3

CHLORINE CONTACT TANK
Type: 5-pass
Volume (total): 116.378m^3
Retention: 39 min.

SLUDGE PUMP
Type: Flygt
Size: 101.6mm



DESIGN DATA - IMPERIAL

PROJECT: Rayside - Balfour
Azilda WPCP

PROJECT NO. 1-0108-67

TREATMENT: Extended Aeration

DESIGN FLOW: .488 mlgd

BRABANT CREEK P.S.
Type: Two, Crane-Deming
Size: each 1700 igpm @66' TDH

PRINCIPAL ST. P.S.
Type: Two Allis-Chalmers
Size: each 630 igpm @70' TDH

GRIT CHANNELS
Size: Three, each 34.25' x 2' x 2.9'
Volume: (total) 3720 I.G.
Retention: (total) 8.6 min

COMMINUTOR
Type: Cord
Size: 16"

AERATION TANK
Volume: 455,770 I.G.
Retention: 17.3 hr

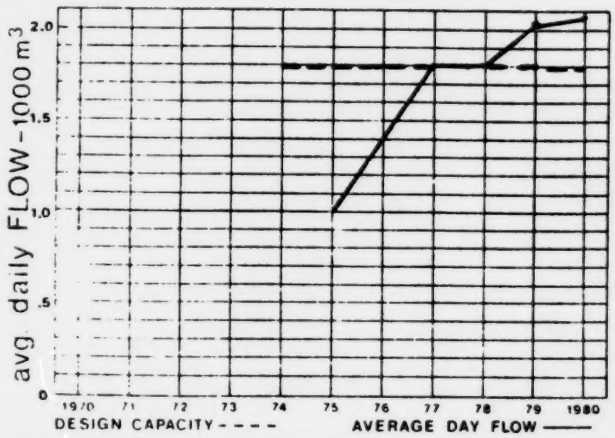
CLARIFIER
Size: 57' dia
Volume: 205,800 I.G.
Retention: 7.5 hr
Loading:
- Surface 245 I.G./ft^2/day
- Weir 3492 I.G./ft/day

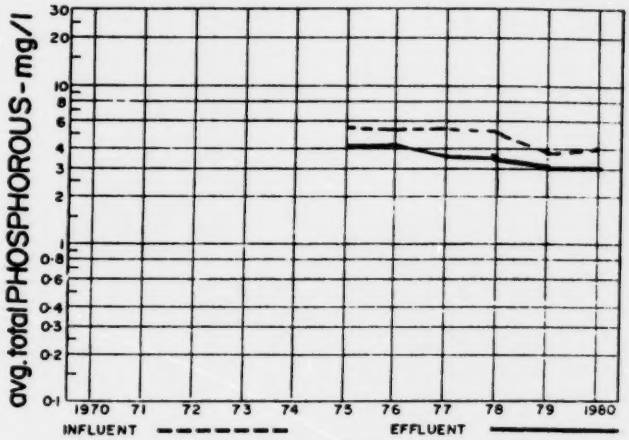
BLOWERS
Type: Two Hoffmann 38407
Size: each 1680 cfm

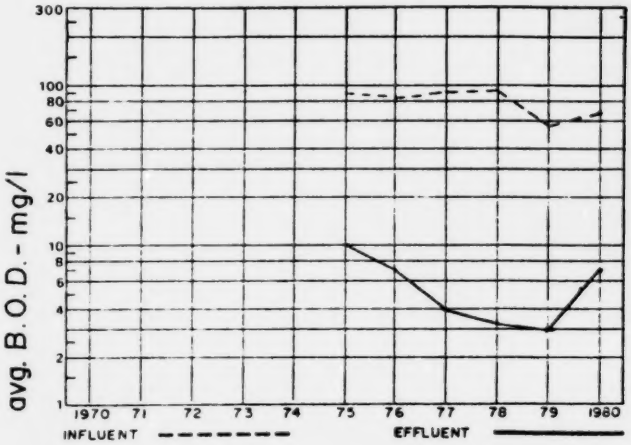
SLUDGE HOLDING TANK
Volume: 18,700 I.G.

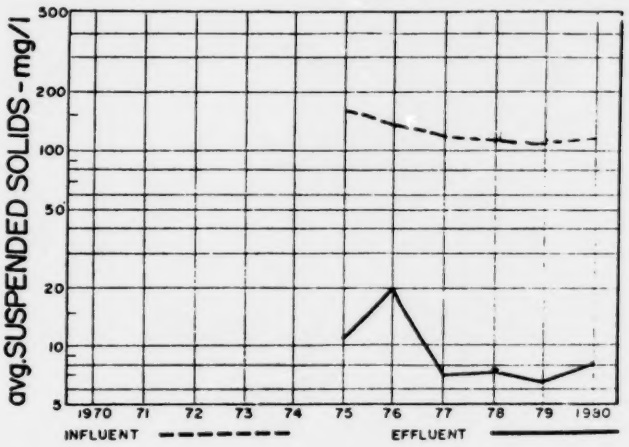
CHLORINE CONTACT TANK
Type: 5-pass
Volume (total): 25,600 I.G.
Retention: 58 min.

SLUDGE PUMP
Type: Flygt
Size: 4-inch









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001783 AZILDA MPCP

MUNICIPALITY : RAYSIDE-BALFOUR (AZILDA)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 15,369
POPULATION SERVED : 4,579
PERCENT SERVED : 29.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.818 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	65.420	2.110	2.770		36.0	11.3	68	1.6	51.0	6.3	87	2.9	3.2	2.7	15	.033
FEB	36.620	1.263	1.410		115.0	7.3	93	3.9	164.0	8.6	94	5.6	6.3	4.9	22	.051
MAR	44.830	1.446	2.500		97.0	7.3	92	4.0	126.0	7.5	94	5.3	5.0	4.5	10	.022
APR	118.640	3.951	6.273		45.0	5.5	87	4.6	106.0	10.5	90	11.3	2.6	1.1	57	.178
MAY	92.840	2.995	4.770		35.0	3.8	89	2.8	103.0	7.4	92	8.8	3.2	1.8	43	.130
JUN																
JUL			OPERATIONAL		SWITCH		TO		MUNICIPAL							
AUG																
SEP																
OCT																
NOV																
DEC																
TOTAL	358.350							17.1				34.1				.414
AVERAGE		2.353			65.6	7.0	89		110.0	8.0	92		4.0	3.0	26	
MAXIMUM			6.273													
NO. OF SAMPLES					7	7			16	16			7	7		

DESIGN DATA - METRIC

RAYSIDE-BALFOUR (CHELMSFORD)

PROJECT: Chelmsford WPCP
PROJECT NO.: 2-1004-73
DESIGN FLOW: 3.1 $10^3 m^3/d$
TREATMENT: Extended Aeration
(or Contact Stabilization)

GRIT REMOVAL
Type: Grit Remover Cyclone

BIOLOGICAL TREATMENT
One of two identical units described hereunder

CONTACT CHAMBER
Volume: 97.7 m^3
Retention: 0.86 hr
Diffusers: Coarse Bubble

RE-AERATION CHAMBER
Volume: 709.2m^3
Retention: 6.2 hr.
Diffusers: Coarse Bubble

ON-SITE LIFT STATION
Type: Smart & Turner (Three)
Size: 1-45.4 l/s & 16.7 l/s (two speed)
2-90.8 l/s

CLARIFIER
Volume: 745.5m^3
Retention: 6.6 hr

AEROBIC DIGESTER NO. 1
Volume: 297.8 m^3
Diffusers: Coarse Bubble

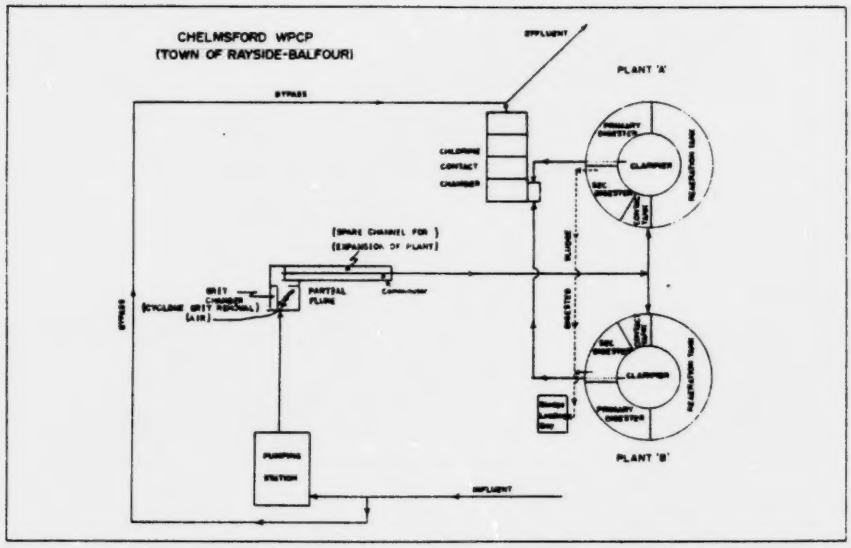
AEROBIC DIGESTER NO. 2
Volume: 297.8 m^3
Diffusers: Coarse Bubble

CHLORINE CONTACT CHAMBER
Common to both plants
Volume: 136.4m^3
Retention: 36 min.

BLOWERS
Type: Spencer
Size: Each 952.0 l/s

COMMINUTOR
Type: Infilco
Size: 40.6 cm

SLUDGE PUMP
Type: Flygt
Size: 10.2 cm



DESIGN DATA - IMPERIAL

Project: Chelmsford WPCP
Project No: 2-1004-73
Design Flow: 0.695 M I & D
Treatment: Extended Aeration
(or Contact Stabilization)

GRIT REMOVAL
Type: Grit Remover Cyclone

BIOLOGICAL TREATMENT
One of two identical units described hereunder

CONTACT CHAMBER
Volume: 21,500 I.G.
Retention: 0.86 hr
Diffusers: Coarse Bubble

RE-AERATION CHAMBER
Volume: 156,000 I.G.
Retention: 6.2 hr
Diffusers: Coarse Bubble

ON-SITE LIFT STATION
Type: Smart & Turner (Three)
Size: 1-600 GPM & 220 GPM (Two speed)
2-1200 GPM

CLARIFIER
Volume: 164,000 I.G.
Retention: 6.6 hr

AEROBIC DIGESTER NO. 1
Volume: 65,500 I.G.
Diffusers: Coarse Bubble

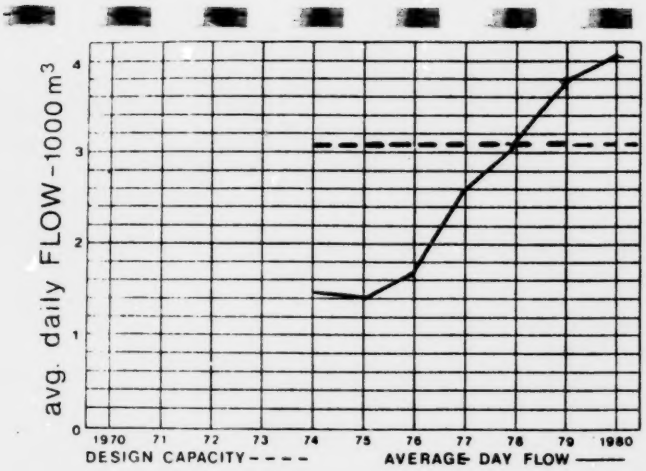
AEROBIC DIGESTER NO. 2
Volume: 65,500 I.G.
Diffusers: Coarse Bubble

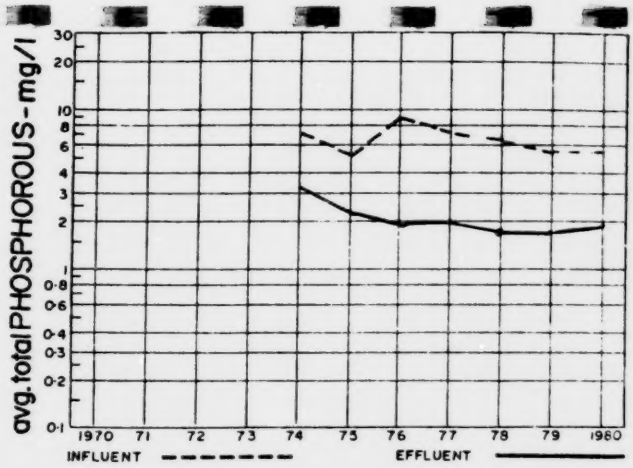
CHLORINE CONTACT CHAMBER
Common to both plants
Volume: 30,000 I.G.
Retention: 36 min

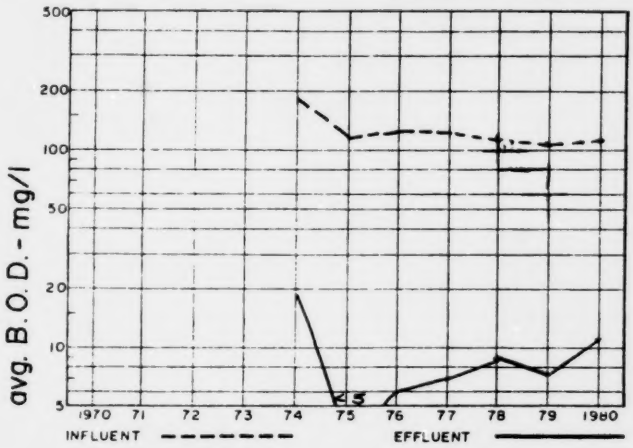
BLOWERS
Type: Spencer
Size: Each 2280 C.F.M.

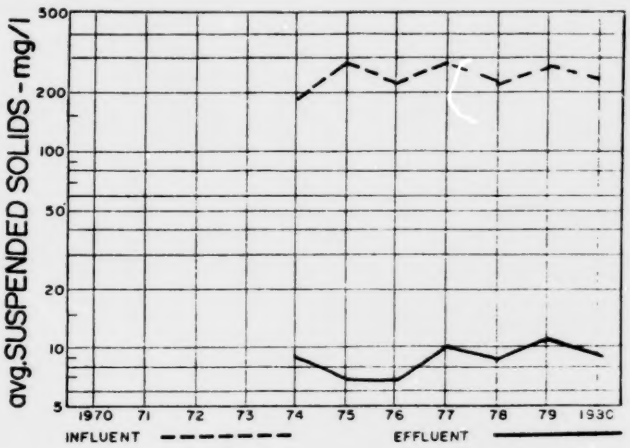
COMMINUTOR
Type: Infilco
Size: 16"

SLUDGE PUMP
Type: Flygt
Size: 4"









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 120001568 CHELMSFORD PLANT 2 (OPER TO MUN IN 80)

MUNICIPALITY : RAYSIDE-BALFOUR(CHLMSF'D
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXTENDED AERATION
CONTACT STABILIZATION

CURRENT POPULATION : 15,369
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 2.841 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	107.260	3.460	4.360		174.0	6.7	96	17.9	214.0	7.1	96	22.1	8.0	1.2	85	.729
FEB	78.700	2.710	2.810		135.0	4.2	96	10.2	238.0	4.7	98	18.3	7.9	2.5	68	.425
MAR	107.660	3.500	9.320		130.0	17.0	86	12.1	287.0	9.0	96	29.9	6.4	3.0	53	.366
APR	198.110	6.603	8.040		58.0	25.0	56	6.5	245.0	18.0	92	44.9	3.1	1.8	41	.258
MAY	175.000	5.645	8.860		53.0	9.0	83	7.7	200.0	8.4	95	33.5	3.4	1.3	61	.368
JUN																
JUL																
AUG			OPERATIONAL		SWITCH			TO	MUNICIPAL							
SEP																
OCT																
NOV																
DEC																
TOTAL	666.730							54.6				148.9				2.146
AVERAGE		4.384			110.0	12.3	88		236.8	9.4	96		5.7	1.9	65	
MAXIMUM			9.320													
NO. OF SAMPLES					10	10			36	38			10	10		

DESIGN DATA - METRIC

SMOOTH ROCK FALLS

PROJECT Town of Smooth Rock Falls
PROJECT NO. 1-0097-67
TREATMENT Extended Aeration
DESIGN FLOW 1.637 $10^3 m^3/d$
DESIGN POPULATION 3000

BOD - Raw Sewage 150 mg/l
- Removal 90%

SS - Raw Sewage 150 mg/l
- Removal 90%

SECONDARY TREATMENT

Aeration Tank

Volume: 1180.9m^3
Detention: 17.25 hr.

Secondary Sedimentation

Size: 13.1m dia. x 3.0m swd x 3.7m cwd
Loading: Weir, 39.6m^3/md
Detention: 48 min.

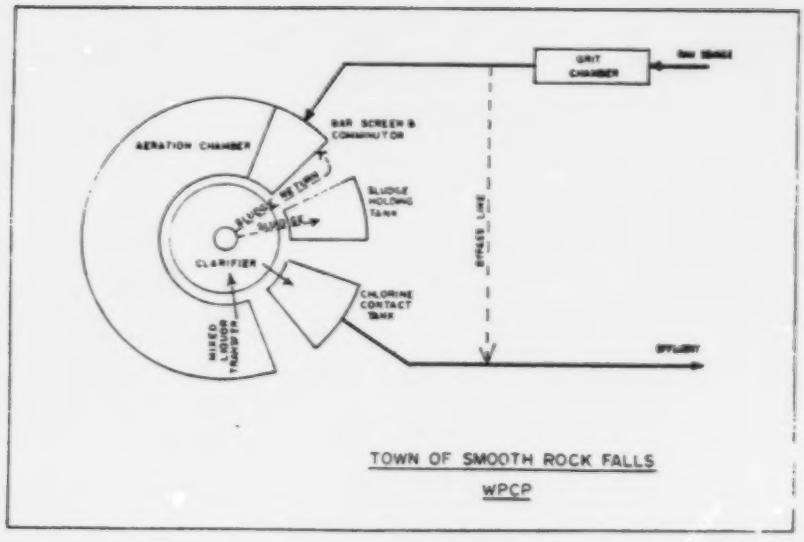
SLUDGE HANDLING

Holding Tank Volume: 42.5 m^3

CHLORINATION

Chlorine Contact Chamber

Size: 34.0 m^3



TOWN OF SMOOTH ROCK FALLS

WPCP

DESIGN DATA - IMPERIAL

PROJECT Town of Smooth Rock Falls

PROJECT NO. 1-0097-67
TREATMENT Extended Aeration
DESIGN FLOW 0.36 mgd
DESIGN POPULATION 3000

BOD - Raw Sewage 150 mg/l
- Removal 90%

SS - Raw Sewage 150 mg/l
- Removal 90%

SECONDARY TREATMENT

Aeration Tank

Volume: 41,700 $ft.^3$
Detention: 17.25 hr.

Secondary Sedimentation

Size: 43' dia. 10 SWD 12' CWD
Loading: Weir, 2660 gal./ft./day
Detention: 48 min.

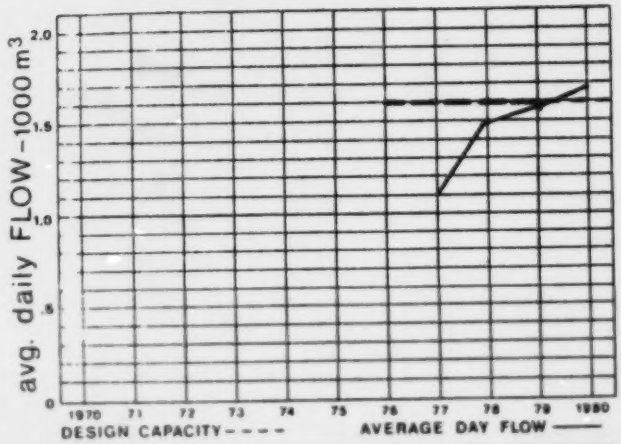
SLUDGE HANDLING

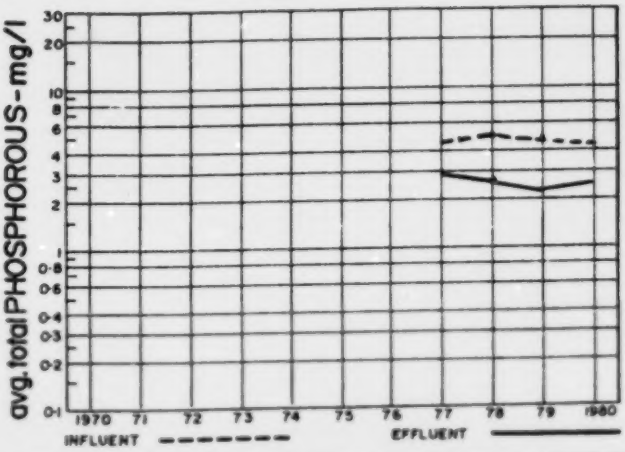
Holding Tank Volume: 1500 $ft.^3$

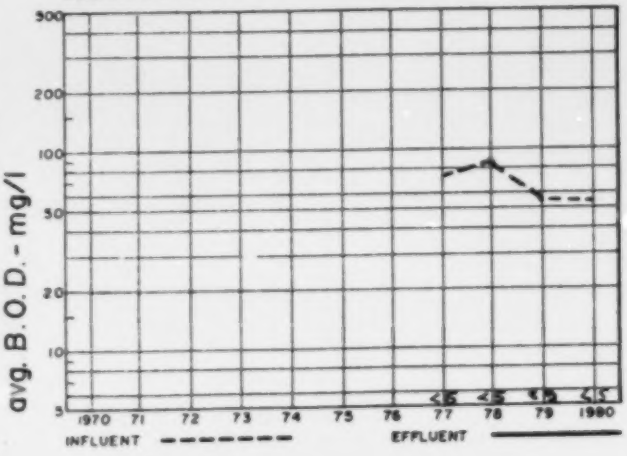
CHLORINATION

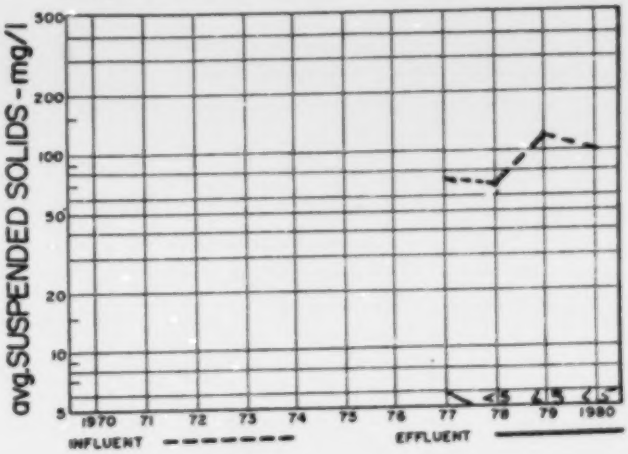
Chlorine Contact Chamber

Size: 1200 $ft.^3$









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002130 SMOOTH ROCK FALLS MPCP

MUNICIPALITY : SMOOTH ROCK FALLS
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

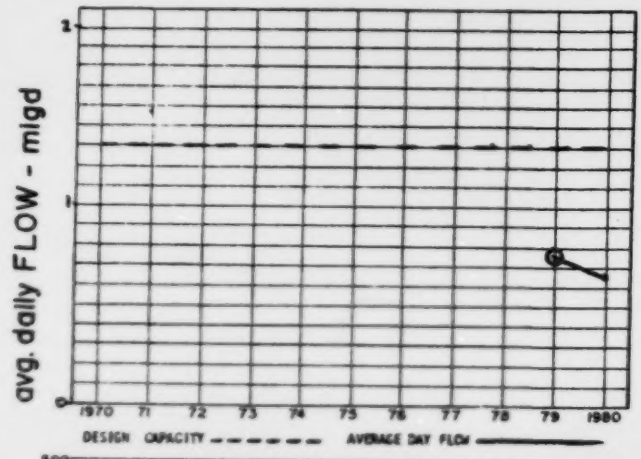
CURRENT POPULATION : 2,373
POPULATION SERVED : 2,325
PERCENT SERVED : 97.9

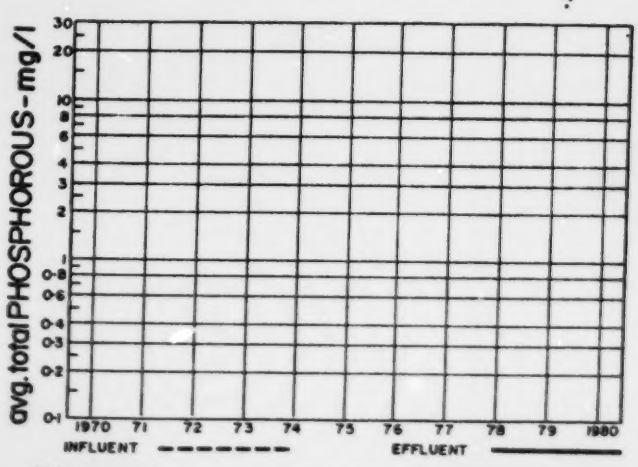
OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

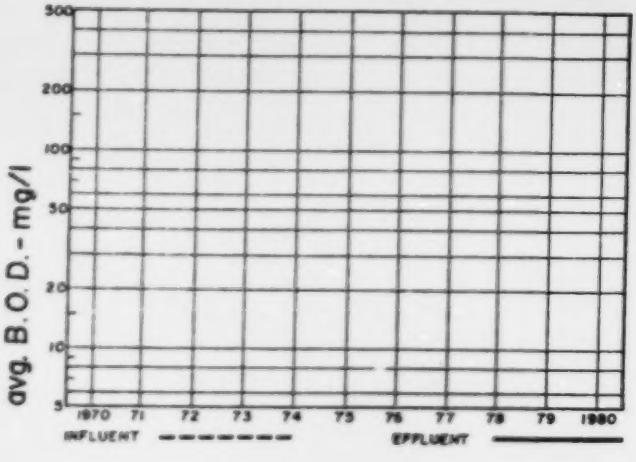
DESIGN CAPACITY : 1.636 1000 M3 DESIGN BOD5 : 150.0 MG/L DESIGN SUSP.SOLIDS : 150.0 MG/L

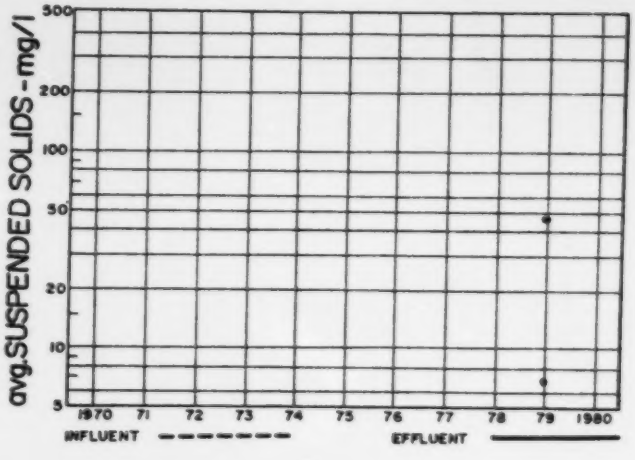
	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	45.786	1.477	1.614		68.0	4.7	93	2.8	110.0	.5	99	5.0	6.2	3.3	46	.133
FEB	44.228	1.525	1.587		58.0	7.0	87	2.2	95.0	.5	99	4.1	5.5	3.0	45	.111
MAR	51.230	1.653	3.046		24.0	5.0	79	.9	62.0	.5	99	3.1	3.9	2.9	25	.051
APR	92.743	3.091	5.046		14.5	2.8	80	1.0	30.0	.5	98	2.7	2.7	1.3	50	.130
MAY	56.761	1.831	2.482		31.0	4.2	86	1.5	47.0	.5	98	2.6	[illegible]	6.1		
JUN	46.440	1.548	2.318		21.0	2.5	88	.8	45.0	5.0	88	1.8	3.6	2.8	22	.037
JUL	43.759	1.412	2.078		10.3	1.4	86	.3	15.5	.5	96	.6	1.3	2.0	-	-
AUG	42.757	1.379	2.269		50.0	1.3	97	2.0	50.0	.5	99	2.1	3.3	2.4	28	.041
SEP	43.207	1.440	2.159		82.5	4.3	94	3.3	140.0	.5	99	6.0	3.8	1.8	52	.086
OCT	56.819	1.833	2.878		41.0	2.5	93	2.1	65.0	10.0	84	3.1	4.2	1.7	59	.142
NOV	42.486	1.416	2.228		220.0	2.6	98	9.2	377.5	.5	99	16.0	8.5	2.3	72	.361
DEC	44.317	1.430	1.591		72.0	6.0	91	2.9	165.0	.5	99	7.2	8.8	3.5	60	.235
TOTAL	610.533							29.7				54.8				1.227
AVERAGE		1.670			57.6	3.6	93		100.1	1.6	98		4.7	2.7	41	
MAXIMUM			5.046													
NO. OF SAMPLES					25	24			25	50			22	24		

WICKSTEED (HORNEPAYNE)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001952 HORNEPAYNE MPCP

MUNICIPALITY : WICKSTEED (HORNEPAYNE)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION (* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,619
POPULATION SERVED : 1,625
PERCENT SERVED : 100.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.363 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	13.949	.451			*	*			*	*			*	*		
FEB	14.266	.510			*	*			*	*			*	*		
MAR	17.578	.567			*	*			*	*			*	*		
APR	30.396	1.013			*	*			*	*			*	*		
MAY	28.529	.920			*	*			*	*			*	*		
JUN	21.530	.717			*	*			47.5	7.5	84	.8	*	*		
JUL	16.907	.532			*	*			50.0	6.0	88	.7	*	*		
AUG	17.032	.549			*	*			*	*			*	*		
SEP	17.287	.576			*	*			*	*			*	*		
OCT	21.428	.691			*	*			*	*			*	*		
NOV	20.038	.667			*	*			*	*			*	*		
DEC	18.322	.591			*	*			*	*			*	*		
TOTAL	236.882											1.5				
AVERAGE		.649							48.7	6.7	86					
MAXIMUM																
NO. OF SAMPLES									5	5						

Ministry of the Environment
Ontario

Northwestern Region

⑥

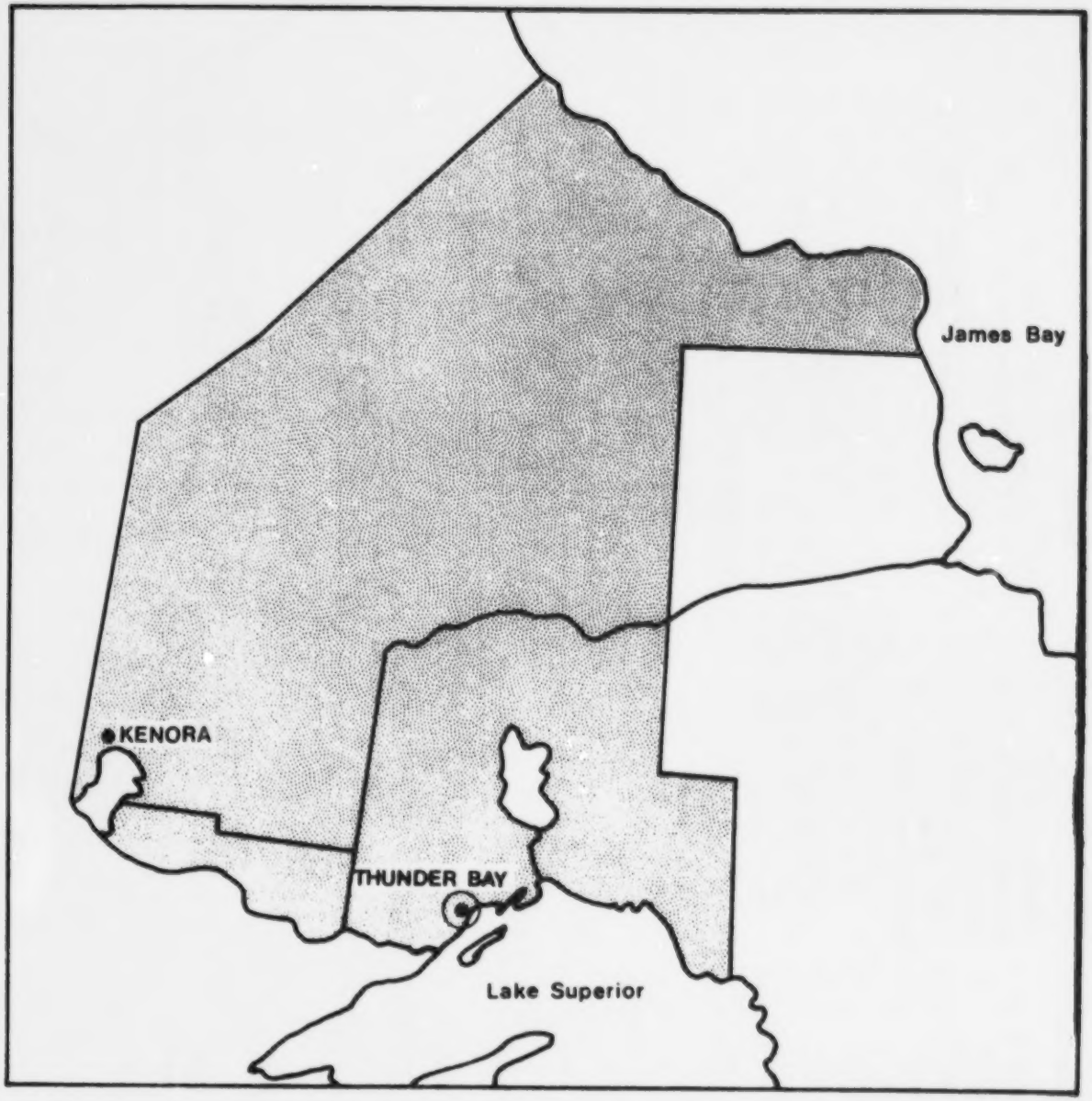
REGIONAL OFFICE
THUNDER BAY
435 James St. S.
P.O. Box 5000
807-475-1205

DISTRICT OFFICE
Kenora
808 Robertson St.
807-468-5578

Ministry of the Environment
Ontario

Northwestern Region

⑥



DESIGN DATA - METRIC

EAR FALLS

PROJECT: Ear Falls Twp. WPCP

PROJECT NO: 1-0061-67

DESIGN FLOW: 2.463 $10^3 m^3/d$

DESIGN BOD: 200 mg/l

DESIGN SS: 310 mg/l

TREATMENT: Extended Aeration

LIFT STATION:
Pumps: 2 Type: FLYGT Star Delta
Size: 1750 r min.

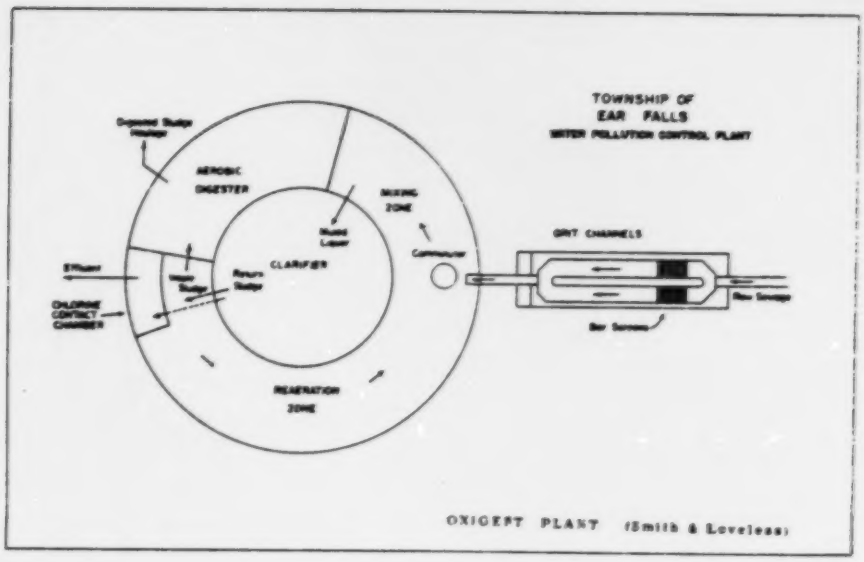
GRIT CHANNELS:
2, .5m w x 4.6m L x .5m swd equipped with bar screens
Volume (each) 1.2 m^3 Detention (each) 3 min.

AERATION TANK:
(Mixing and Reaeration zones)
6.0m W x 4.6m swd x 282° arc
Volume: 264.6 m^3 Detention 10.0 hours
Comminutor: Type: HELIGEAR Size: 1725 rpm, .19kW
Blowers: 3 type ROOTS-CONNERSVILLE
Size: 925 rpm 11.2 kW 116.9 l/s 48.3 kPa

CLARIFIER:
5.5m I.d. x 3.9m swd
Volume 127.3 m^3 Detention 4.8 hours

AEROBIC DIGESTER:
6.0m W x 4.6m swd x 90° arc
Volume 108.2 m^3 Detention 4.1 hours

CHLORINE CONTACT CHAMBER:
1.1m W x 4.6m swd x 30° arc
Volume 15.2 m^3 Detention 34 minutes
Chlorinator: Type: Wallace & Tiernan
Size: 1.5 l/s



OXIGEST PLANT (Smith & Loveless)

DESIGN DATA - IMPERIAL

Project Ear Falls Twp WPCP
Project No. 1-0061-67
Design Flow 0.6 MIGD
Design BOD 200 mg/l
Design SS 310 mg/l

LIFT STATION:
Pumps: 2 Type: FLYGT Star Delta
Size: 1750 rpm

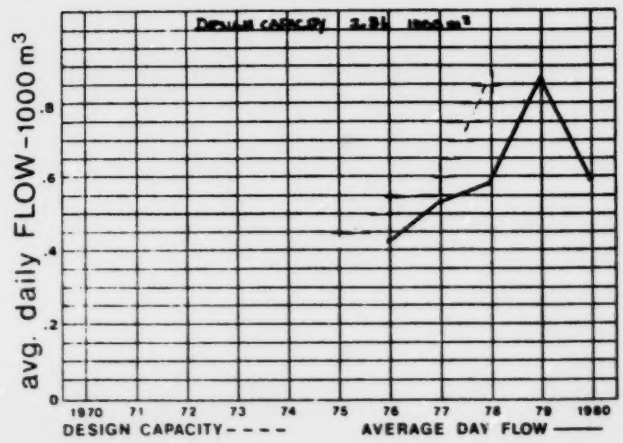
GRIT CHANNELS:
2, 1.6' w x 15.9'1 x 1.6' swd equipped with bar screens
Volume (each) 270 I.G. Detention (each) 3 min.

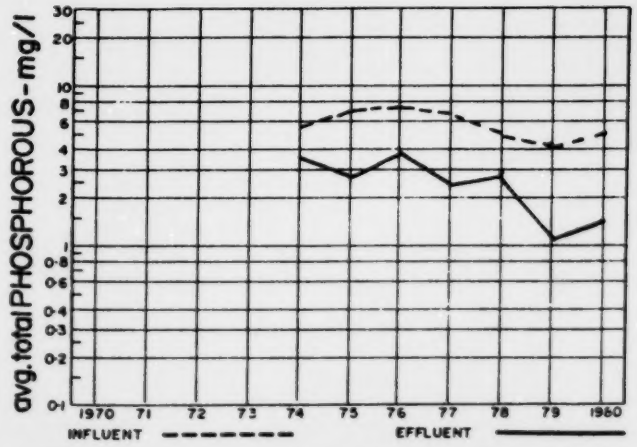
AERATION TANK:
(Mixing and Reaeration zones)
19.65' w x 15.25' swd x 282° arc
Volume: 58,200 I.G. Detention 10.0 hours
Comminutor: Type: HELIGEAR Size: 1725 rpm, ¼ HP
Blowers: 3 type ROOTS-CONNERSVILLE
Size: 925 rpm 15 HP 275 cfmct 7 psi

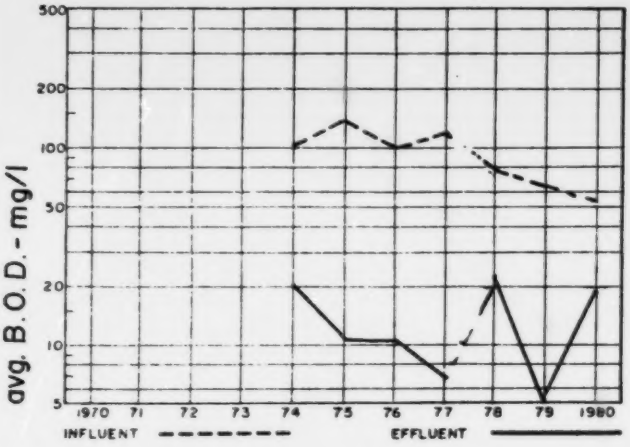
CLARIFIER:
18.25' i.d. x 12.9' swd
Volume 28,000 I.G. Detention 4.8 hours

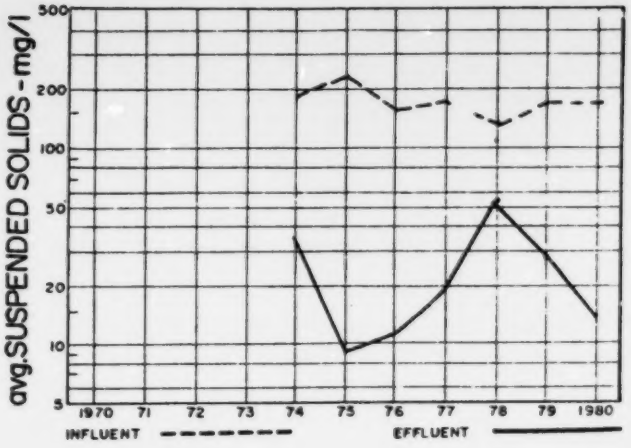
AEROBIC DIGESTER:
19.65' w x 15.25' swd x 90° arc
Volume 23,800 I.G. Detention 4.1 hours

CHLORINE CONTACT CHAMBER:
3.5w x 15.25' swd x 30° arc
Volume 3350 I.G. Detention 34 minutes
Chlorinator: Type: Wallace & Tiernan
Size: 20 gpm









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001006 EAR FALLS MPCP

MUNICIPALITY : EAR FALLS
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABILIZATION
CONVERT TO OTHER OPERATING MODE

CURRENT POPULATION : 2,036
POPULATION SERVED : 1,900
PERCENT SERVED : 93.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.863 1000 M3 DESIGN BOD5 : 280.0 MG/L DESIGN SUSP.SOLIDS : 310.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	14.590	.471	.799	.864	73.0	3.8	94	1.0	162.0	28.0	82	1.9	5.0	.7	84	.062
FEB	14.816	.511	1.435	1.909	51.0	4.0	92	.6	155.0	24.0	84	1.9	4.0	.6	84	.050
MAR	14.816	.483	.897	2.272	53.5	2.3	95	.7	125.0	13.8	88	1.6	4.7	.4	91	.064
APR	12.971	.432	1.126	2.272	49.0	75.4	-	-	253.3	77.5	-	-	4.2	.8	79	.043
MAY	19.661	.634	.838	2.591	48.5	31.0	36	.3	237.5	242.5	-	-	8.2	7.5	8	.014
JUN	16.944	.565	.955	2.363	24.3	46.8	-	-	113.3	71.6	36	.7	5.4	1.8	65	.059
JUL	25.610	.826	1.022	2.900	95.0	1.7	98	2.3	130.0	11.7	91	3.0	5.5	.4	92	.130
AUG	20.959	.676	1.098	4.000	13.3	2.0	84	.2	150.0	10.0	93	2.9	4.8	.4	90	.092
SEP	18.351	.612	.969	2.273	49.0	1.7	96	.8	135.0	4.5	96	2.3	4.3	.3	92	.073
OCT	FLOW METER NOT OPERATING				85.0	66.8	21		206.7	203.3	1		5.8	2.9	50	
NOV					67.0	1.0	98		220.0	13.0	94		5.5	.4	91	
DEC	FLOW METER NOT OPERATING 22.727	.733		ESTIMATED FLOW	72.5	2.5	96	1.5	125.0	40.0	68	1.9	5.7	.8	85	.111
TOTAL								7.8				16.5				.698
AVERAGE		.594			56.7	19.9	64		167.7	68.7	63		5.2	1.4	72	
MAXIMUM			1.435	4.000												
NO. OF SAMPLES					39	37			39	37			39	37		

GERALDTON

DESIGN DATA - METRIC

PROJECT Town of Geraldton

PROJECT NO. 1-0041-66

TREATMENT Extended aeration

DESIGN FLOW 1.8 $10^3 m^3/d$

BOD - 230 mg/l

PRETREATMENT

Grit Removal

Type: Grit channels
Size: Twin 7.6m x 0.6m x 0.2m deep

SECONDARY TREATMENT

Aeration Tank

Volume: 51.6m^3
Loading: 416.4 kg BOD/day

Clarifier

Surface Area: 122.6m^2
Overflow Rate: 14.7 $m^3/m^2.d$

SLUDGE HANDLING

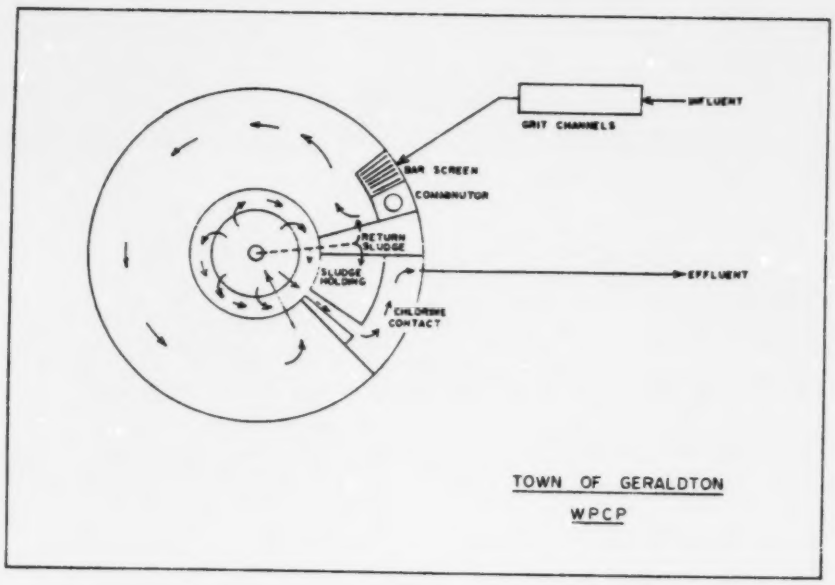
Holding Tank

Volume: 56.6m^3

CHLORINATION

Chlorination Contact Chamber

Volume: 31.4m^3
Retention: 30 min.



TOWN OF GERALDTON

WPCP

DESIGN DATA - IMPERIAL

PROJECT TOWN OF GERALDTON

PROJECT NO. 1-0041-66
TREATMENT Extended aeration
DESIGN FLOW 0.4 MGD

BOD - 230 mg/l

PRETREATMENT

Grit Removal

Type: Grit channels
Size: Twin 25' x 2' x 0.72' deep

SECONDARY TREATMENT

Aeration Tank

Volume: 11,366 gal.
Loading: 918 lb. BOD/day

Clarifier

Surface Area: 132' $ft.^2$
Overflow Rate: 300 gal./ft^2/day

SLUDGE HANDLING

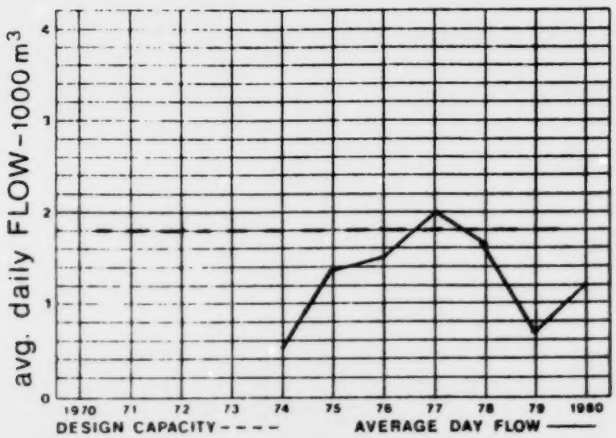
Holding Tank

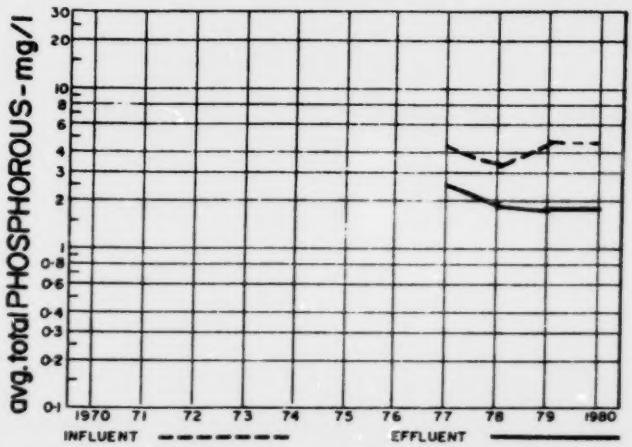
Volume: 2000 $ft.^3$

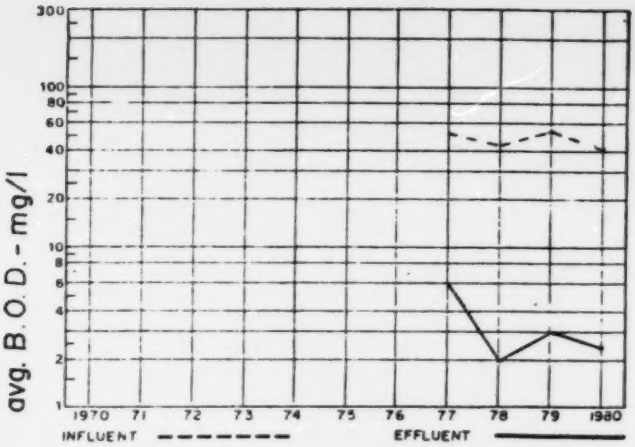
CHLORINATION

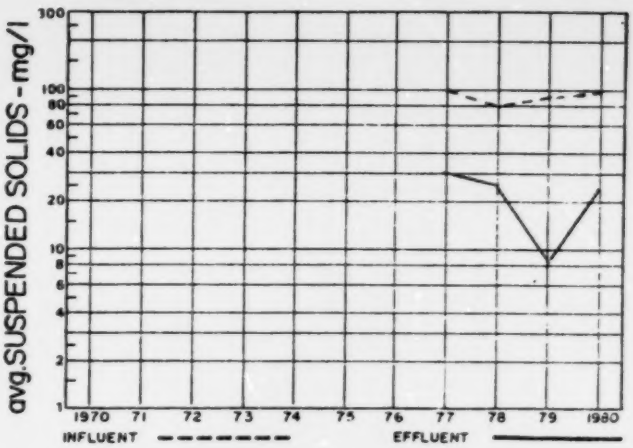
Chlorination Contact Chamber

Volume: 1110 $ft.^3$
Retention: 30 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001649 GERALDTON M P C P

MUNICIPALITY : GERALDTON
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
CONVERT TO OTHER OPERATING MODE

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 3,010
POPULATION SERVED : 3,000
PERCENT SERVED : 99.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.818 1000 M3 DESIGN BODS : 230.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	*				28.0	5.5	80		75.0	10.0	86		2.5	2.8	-	
FEB	*				*	*			*	*			*	*		
MAR	53.352	1.721	1.818		46.0	3.0	93	2.2	80.0	5.0	93	4.0	8.4	2.8	66	.299
APR	54.275	1.809	1.818		30.7	1.0	96	1.6	61.6	10.0	83	2.8	2.8	1.9	32	.049
MAY	57.757	1.863			*	*			*	*			*	*		
JUN	47.924	1.597	1.818		46.0	1.0	97	2.1	120.0	95.0	20	1.1	4.1	1.5	63	.125
JUL	48.297	1.558	1.864		*	*			*	*			*	*		
AUG	43.337	1.398	1.818		*	*			*	*			*	*		
SEP	45.992	1.533	1.818		*	*			*	*			*	*		
OCT	12.400	.400	.400		55.0	1.2	97	.6	150.0	7.0	95	1.7	4.5	1.3	71	.040
NOV	11.993	.399	.400		40.0	2.0	95	.4	110.0	10.0	90	1.1	3.7	.9	73	.033
DEC	12.209	.394			*	*			*	*			*	*		
TOTAL								7.1				10.9				.546
AVERAGE		1.267			40.9	2.2	94		99.4	22.8	77		4.3	1.8	56	
MAXIMUM			1.864													
NO. OF SAMPLES					8	8			8	8			8	8		

DESIGN DATA - METRIC

PROJECT: Ignace Twp. WPCP

PROJECT NO: 1-0060-67

DESIGN FLOW: 0.95 10^3 m^3/d
Contact Stabilization
2.5 10^3 m^3/d
Extended Aeration

DESIGN POPULATION: 2500

BOD: Raw Sewage - 129.3 kg/d

IGNACE

PRETREATMENT

PUMPING STATION:
Pumps: Two, Type: FLYGT CP3151
Size: 42.3 l/s @ 18.0m TDH

Bar Screen at pumping station inlet

GRIT CHANNELS:
Two, 7.6m x .6m x .6m swd
Volume: (each) 2.8 m^3
Detention: (each) 4.2 min.

BIOLOGICAL TREATMENT (Extended Aeration)

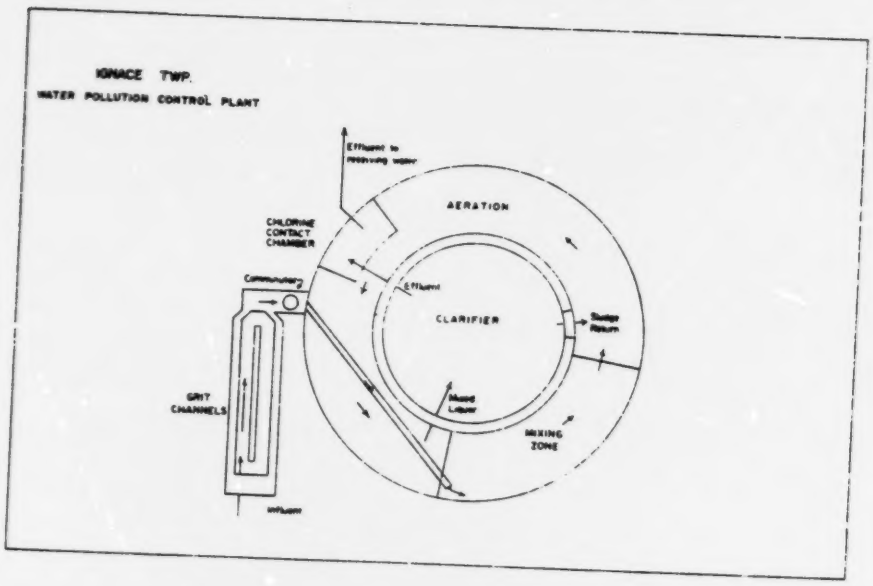
MIXING ZONE:
Volume: 118.2 m^3 Detention: 3.0 hours

AERATION ZONE:
Volume: 513.7 m^3

Blowers, Two, Type: Roots Connersville RA188
Size: 246.6 l/s

SETTLING ZONE:
7.1 m dia. x 3.81 m swd
Volume: 168.2 m^3. Detention: 4.2 hours
Overflow Rate: 24.4 $m^3/m^2.d$

CHLORINE CONTACT ZONE:
Volume: 19.5 m^3 Detention. 29 min.



DESIGN DATA - IMPERIAL

Project: Ignace Twp. WPCP

Project No:	1-0060-67
Design Flow:	0.21 MIGD
	Contact Stabilization
	0.55 MIGD
	Extended Aeration
Design Population:	2500
BOD:	Raw Sewage - 285 lb/day

PRETREATMENT

PUMPING STATION:
Pumps: Two, Type: FLYGT CP3151
Size: 670 USGPM at 59' TDH

Bar Screen at pumping station inlet

GRIT CHANNELS:
Two, 25' x 2' x 2' swd
Volume: (each) 624 I. Gal.
Detention: (each) 4.2 min.

BIOLOGICAL TREATMENT (Extended Aeration)

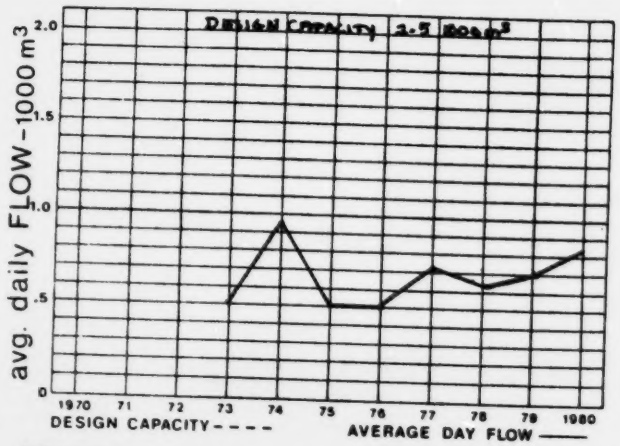
MIXING ZONE:
Volume: 26,000 I. Gal. Detention: 3.0 hours

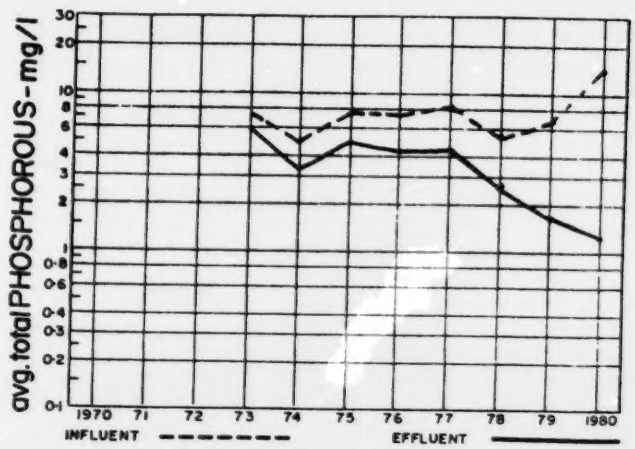
AERATION ZONE:
Volume: 113,000 I. Gal.

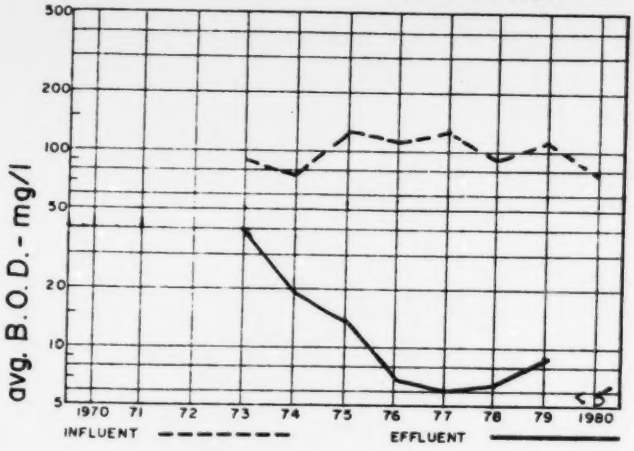
Blowers, Two, Type: Roots Connersville RA188
Size: 590 cfm

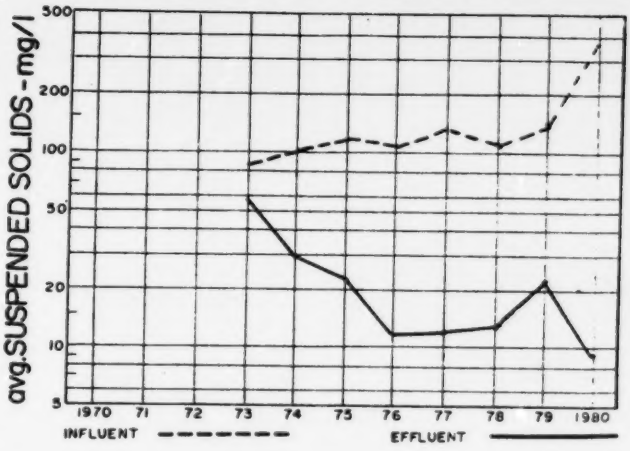
SETTLING ZONE:
23'2" dia. x 12.6" swd
Volume: 37,000 I. Gal. Detention: 4.2 hours
Overflow Rate: 500 I. Gal/ft²/day

CHLORINE CONTACT ZONE:
Volume: 4300 I. Gal. Detention: 29 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001355 IGNACE M P C P

MUNICIPALITY : IGNACE
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
CONVERT TO OTHER OPERATING MODE

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 2,131
POPULATION SERVED : 2,500
PERCENT SERVED : 117.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.500 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	33.983	1.096	2.150		85.0	5.8	93	2.6	165.0	13.0	92	5.1	5.0	.5	89	.151
FEB	26.553	.915	1.920		82.5	2.5	96	2.1	125.0	7.5	94	3.1	6.0	.8	85	.136
MAR	30.603	.987	1.929		*	1.2			*	10.0			5.9	.3	94	.171
APR	28.782	.959	1.145		100.0	6.5	93	2.6	210.0	20.0	90	5.4	6.3	1.0	84	.153
MAY	22.275	.719	.916		65.0	1.9	97	1.4	95.0	7.5	92	1.9	3.8	.7	80	.068
JUN	21.126	.704	.951		52.0	1.8	96	1.0	76.0	6.0	92	1.4	4.9	.9	81	.084
JUL	22.578	.728	.821		260.0	2.5	99	5.8	3245.0	7.5	99	73.0	136.4	1.6	98	3.044
AUG	21.580	.696	.995		51.5	2.2	95	1.0	62.5	5.0	92	1.2	4.5	2.2	51	.050
SEP	21.180	.706	1.151		43.0	2.5	94	.8	58.3	8.3	85	1.0	3.7	1.3	64	.051
OCT	24.421	.787	1.079		54.0	2.6	95	1.2	76.6	8.6	88	1.6	4.3	1.0	76	.081
NOV	25.677	.855	1.133		45.5	2.7	94	1.0	70.0	10.0	85	1.5	3.5	.8	74	.067
DEC	23.817	.768	1.007		38.0	3.1	91	.8	45.0	7.0	84	.9	2.9	3.1	-	-
TOTAL	302.575							20.8				96.6				4.056
AVERAGE		.827			79.6	2.9	96		384.4	9.2	97		15.6	1.2	92	
MAXIMUM			2.150													
NO. OF SAMPLES					81	25			24	25			22	25		

LONGLAC

DESIGN DATA - METRIC

PROJECT Twp. of Longlac WPCP

PROJECT NO. 1-0014-66

TREATMENT: Contact Stabilization

DESIGN FLOW: 2.5 $10^3m^3/d$

BOD: Raw Sewage 200 mg/l

PRETREATMENT

GRIT CHANNELS:
Two, each 6.4m x .5m x .6m swd
Volume (each): 1.8 m^3
Detention (each) 2.7 min.

COMMINUTOR:
Type: A 10R

BIOLOGICAL TREATMENT

MIXING TANK:
Volume: 118.2m^3 Detention: 3 hours

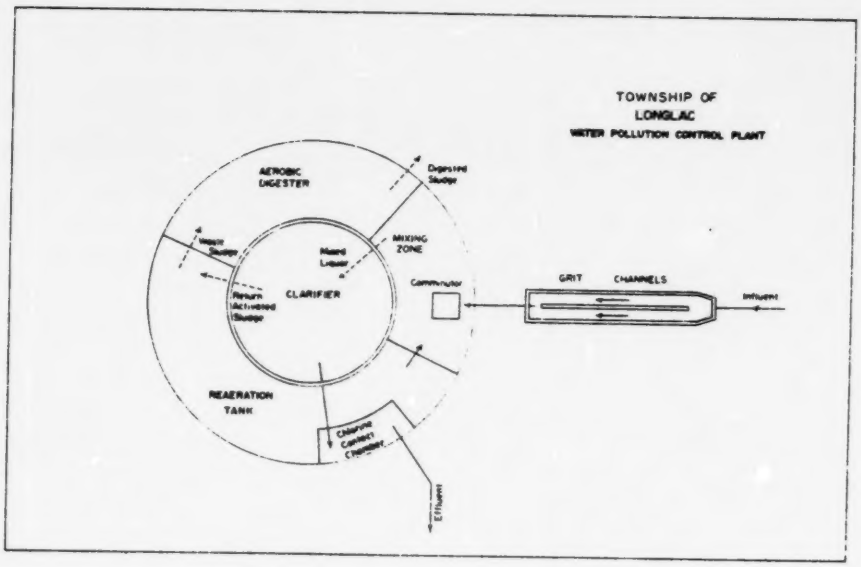
SETTLING TANK
Volume: 168.2m^3 Detention: 4.2 hours
Overflow Rate: 28.2 $m^3/m^2 \cdot d$

REAERATION TANK:
Volume: 300.0 m^3

Blowers: Two Type SUTORBILT 8HB
Size: 246.6 l/s at 62.1 kW

AEROBIC DIGESTER:
Volume: 212.8 m^3

CHLORINE CONTACT CHAMBER:
Volume: 19.5m^3
Detention: 30 min.



DESIGN DATA - IMPERIAL

PROJECT Twp of Longlac WPCP
Project No: 1-0014-66
Treatment: Contact Stabilization
Design Flow: 0.54 MIGD
BOD: Raw Sewage 425 lb. BOD/day

PRETREATMENT

GRIT CHANNELS:
Two, each 21' x 1.5' x 2' swd
Volume (each): 393 I. Gal.
Detention (each) 2.7 min.

COMMINUTOR:
Type: A 10R

BIOLOGICAL TREATMENT

MIXING TANK:
Volume: 26,000 I. Gal. Detention: 3 hours

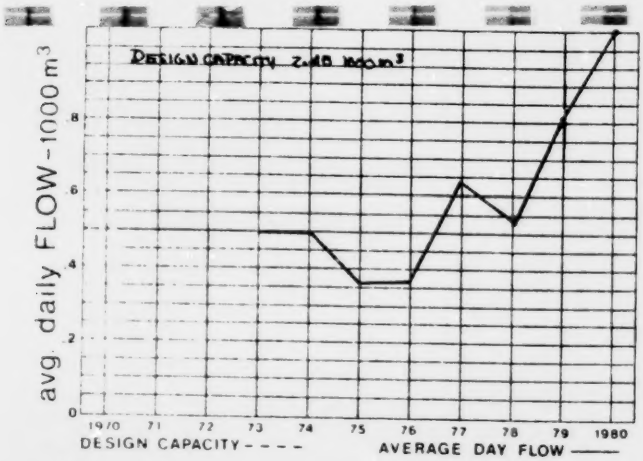
SETTLING TANK
Volume: 37,000 I. Gal. Detention: 4.2 hours
Overflow Rate: 577 I. Gal/ft^2/day

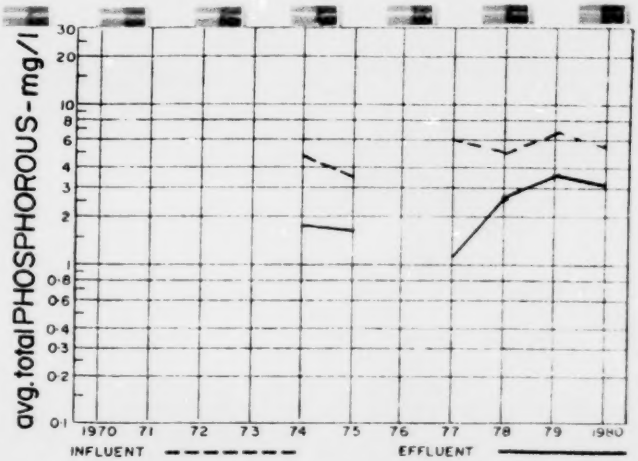
REAERATION TANK:
Volume: 66,000 I. Gal.

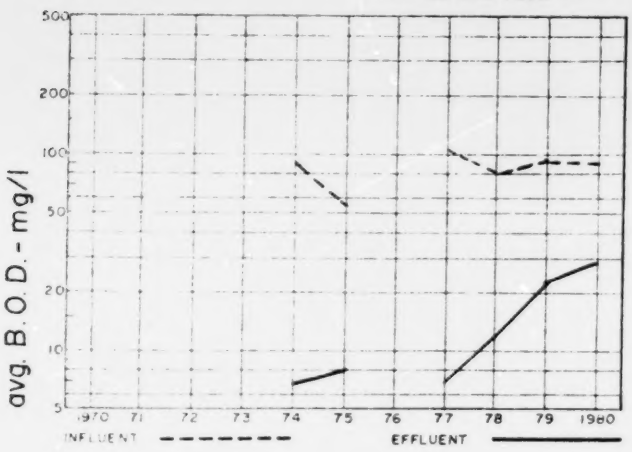
Blowers: Two Type: SUTORBILT 8HB
Size: 590 cfm at 9 psi

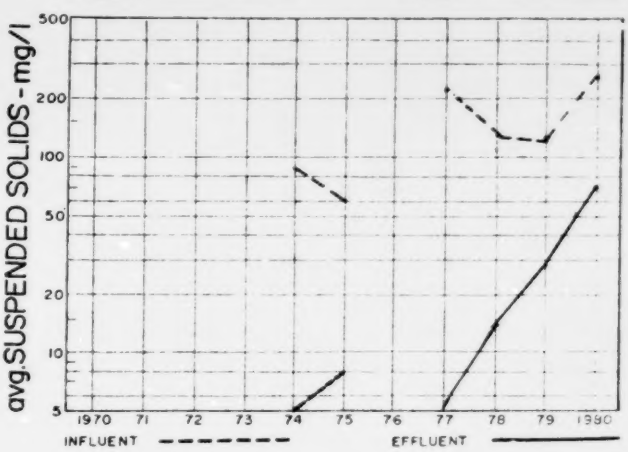
AEROBIC DIGESTER:
Volume: 46,800 I. Gal.

CHLORINE CONTACT CHAMBER
Volume: 4300 I. Gal.
Detention: 30 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001042 LONGLAC M P C P

MUNICIPALITY : LONGLAC
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 2,189
POPULATION SERVED : 2,500
PERCENT SERVED : 114.2

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.454 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	16.911	.546	.663		135.0	41.0	69	1.5	160.0	82.0	48	1.3	7.9	4.5	43	.057
FEB	16.747	.577	.713		120.0	55.0	54	1.0	130.0	110.0	15	.3	7.0	5.6	20	.023
MAR	15.515	.500	1.081		160.0	27.0	83	2.0	200.0	170.0	15	.4	7.9	4.8	39	.048
APR	38.750	1.292	2.118		70.0	60.0	14	.3	360.0	80.0	77	10.8	*	3.5		
MAY	57.270	1.847	3.240		70.0	2.0	97	3.8	110.0	20.0	81	5.1	6.3	1.7	73	.263
JUN	48.210	1.607	2.980		147.0	40.0	72	5.1	985.0	77.0	92	43.7	4.4	3.8	13	.029
JUL	44.980	1.450	2.160		58.5	4.1	92	2.4	370.0	27.5	92	15.4	1.4	1.9	-	-
AUG	*				62.5	31.0	50		110.0	57.5	47		6.1	1.9	68	
SEP	29.072	.969	1.811		50.0	13.1	73	1.0	160.0	30.0	81	3.7	5.0	.8	82	.120
OCT	*				45.0	10.7	76		100.0	30.0	70		4.5	1.2	73	
NOV	*				*	*			*	*			*	*		
DEC	*				120.0	38.0	68		210.0	100.0	52		8.3	4.8	42	
TOTAL								17.7				81.0				.540
AVERAGE		1.099			94.3	29.2	68		263.1	71.2	72		5.8	3.1	46	
MAXIMUM			3.240													
NO. OF SAMPLES					19	19			19	19			18	19		

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110003148 LONGLAC MPCP SECTION "A"

MUNICIPALITY : LONGLAC SECTION A
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
AEROBIC SINGLE STAGE

CURRENT POPULATION :
POPULATION SERVED :
PERCENT SERVED :

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.045 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<-- FLOW DATA -->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	8.455	.275			160.0	50.0	68	.9	160.0	80.0	50	.6	7.3	5.1	30	.019
FEB	8.373	.299			120.0	55.0	54	.5	130.0	110.0	15	.1	7.0	5.6	20	.012
MAR	7.757	.250			140.0	2.0	98	1.0	230.0	290.0	-	-	8.8	5.1	42	.029
APR	19.375	.645			70.0	60.0	14	.1	360.0	80.0	77	5.4	8.5	3.5	58	.097
MAY	28.635	.923			70.0	2.0	97	1.9	110.0	20.0	81	2.5	6.3	1.7	73	.132
JUN	24.105	.803			75.0	5.0	93	1.6	130.0	15.0	88	2.7	5.5	2.2	60	.080
JUL	22.490	.725			70.0	3.4	95	1.4	20.0	30.0	-	-	.9	2.0	-	-
AUG	*				50.0	25.0	50		110.0	65.0	40		4.8	1.7	64	
SEP	14.536	.468			60.0	20.0	66	.5	210.0	20.0	90	2.7	6.7	.7	88	.086
OCT	*				55.0	7.5	86		110.0	40.0	63		4.5	1.9	57	
NOV	*				*	*			*	*			*	*		
DEC	*				110.0	16.0	85		200.0	30.0	85		7.7	3.6	53	
TOTAL								8.4				14.3				.453
AVERAGE		.549			89.0	22.3	74		160.9	70.9	55		6.1	3.0	51	
MAXIMUM																
NO. OF SAMPLES					11	11			11	11			9	11		

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110003157 LONGLAC MPCP SECTION "B"

MUNICIPALITY : LONGLAC SECTION B
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION
AEROBIC SINGLE STAGE

CURRENT POPULATION : 2
POPULATION SERVED :
PERCENT SERVED :

(* DATA NOT AVAILABLE)

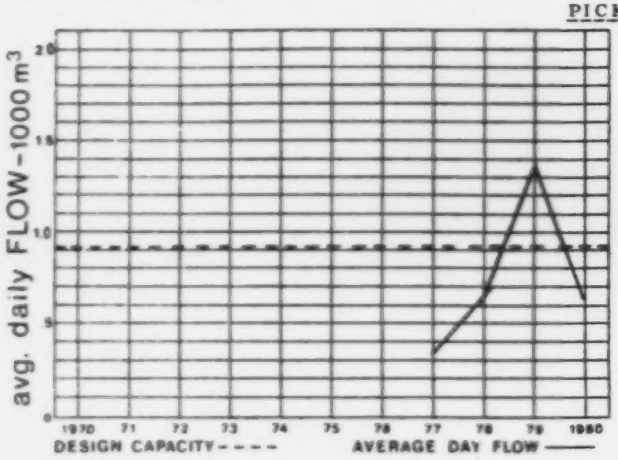
OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

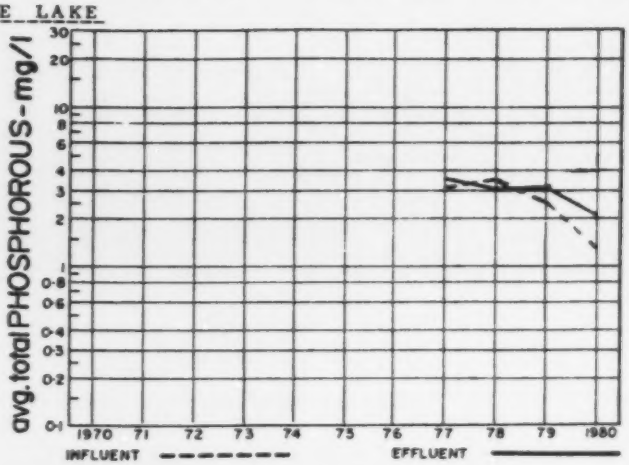
DESIGN CAPACITY : 0.045 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

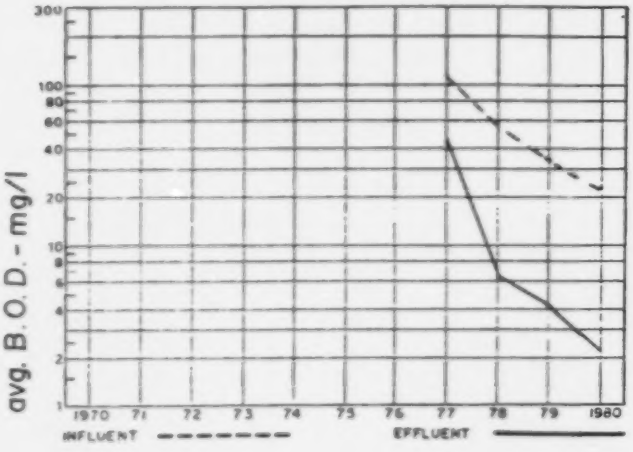
	<-- FLOW DATA -->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	8.455	.275			110.0	32.0	70	.6	160.0	85.0	46	.6	8.6	4.0	53	.039
FEB	8.373	.299			*	*			*	*			*	*		
MAR	7.757	.250			180.0	34.0	81	1.1	170.0	50.0	70	.9	7.1	5.6	21	.012
APR	19.375	.645			*	*			*	*			*	*		
MAY	28.635	.923			*	*			*	*			*	*		
JUN	24.105	.803			220.0	75.0	65	3.4	1840.0	140.0	92	40.9	3.4	5.5	-	-
JUL	22.490	.725			47.0	4.8	89	.9	720.0	25.0	96	15.6	1.9	1.8	5	.002
AUG	*				75.0	37.0	50		110.0	50.0	54		7.5	2.2	70	
SEP	14.536	.468			40.0	6.2	84	.4	110.0	40.0	63	1.0	3.4	1.0	70	.035
OCT	*				35.0	14.0	60		90.0	20.0	77		4.5	.5	88	
NOV	*				*	*			*	*			*	*		
DEC	*				130.0	60.0	53		220.0	170.0	22		9.0	6.0	33	
TOTAL								6.7				59.1				.088
AVERAGE		.549			104.6	32.8	68		427.5	72.5	83		5.6	3.3	41	
MAXIMUM																
NO. OF SAMPLES					8	8			8	8			8	8		

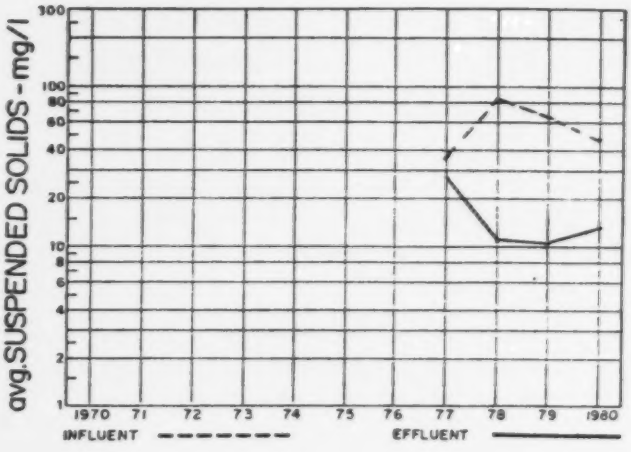
PICKLE LAKE

PICKLE LAKE









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002185 PICKLE LAKE MPCP

MUNICIPALITY : PICKLE LAKE
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 744
POPULATION SERVED : 900
PERCENT SERVED : 120.9

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA				—><—BIOCHEMICAL OXYGEN DEMAND—><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	16.815	.542	.712		42.0	2.9	93	.6	55.0	16.0	70	.6	1.0	2.0	-	-
FEB	21.258	.733	1.034		22.0	2.4	89	.4	50.0	16.0	68	.7	1.3	1.8	-	-
MAR	26.329	.849	1.340		18.0	2.0	88	.4	37.0	13.0	64	.6	2.7	1.5	44	.032
APR	25.767	.859	.968		25.0	1.2	95	.6	60.0	4.0	93	1.4	1.4	1.4		
MAY	22.904	.739	1.049		22.0	3.1	85	.4	48.0	17.5	63	.6	1.4	1.4		
JUN	19.493	.649	1.049		20.0	1.0	95	.3	42.0	10.0	76	.6	.8	1.9	-	-
JUL	17.992	.580	.886		24.0	1.3	94	.4	46.7	5.3	88	.7	1.1	2.0	-	-
AUG	17.997	.568	.779		34.0	1.3	96	.5	70.0	10.0	85	1.0	1.4	3.3	-	-
SEP	13.585	.452	.995		24.0	3.5	85	.2	61.3	15.0	75	.6	2.1	2.5	-	-
OCT	14.380	.463	.601		34.0	5.0	79	.2	60.0	20.0	66	.5	1.7	3.3	-	-
NOV	14.226	.474	.616		19.5	*			35.0	*			1.4	*		
DEC	22.437	.723	.981		13.0	*			30.0	*			1.5	*		
TOTAL	232.783							4.4				7.7				.032
AVERAGE		.636			23.9	2.3	90		49.5	12.6	74		1.4	2.1	-	
MAXIMUM			1.340													
NO. OF SAMPLES					35	30			34	31			35	30		

RED LAKE

DESIGN DATA - METRIC

PROJECT Red Lake Twp. WPCP

PROJECT NO. 1-0040-68

TREATMENT Contact Stabilization

DESIGN FLOW 1.13 $10^3 m^3/d$

BOD - Raw Sewage 231.3 kg/d

RAW SEWAGE PUMPING:
Pumping Station 1
Two, 27.13 l/s @ 20.3m TDH

Pumping Station 2
Two, 7.9 l/s @ 15.5m TDH

PRETREATMENT

GRIT CHANNELS:
Two, each 5.1m x .6m x .9m swd
Volume: (each) $3.0m^3$. Detention: (each) 3 min.

BAR SCREENS:
.6cm x 5cm steel bats on 2.4cm centres

BIOLOGICAL TREATMENT

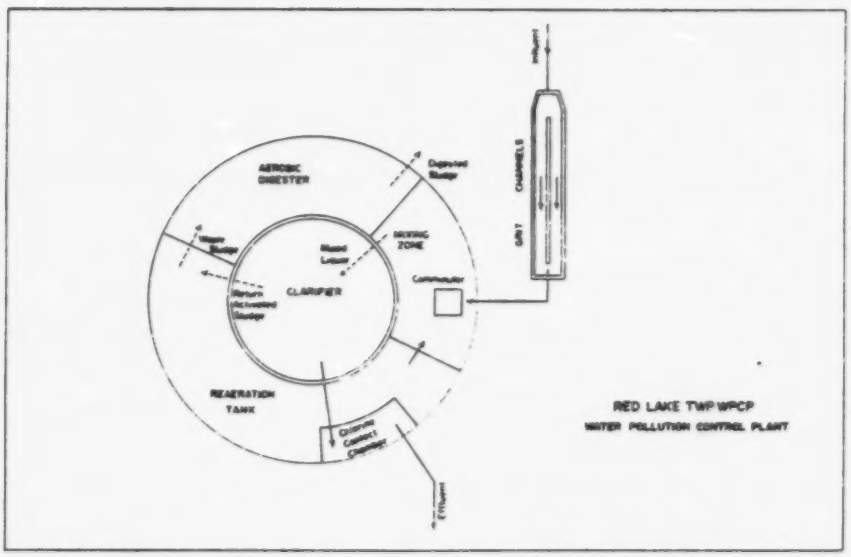
MIXING TANK:
Volume: $151.8m^3$
Contact Time: 2.7 hours

REAERATION TANK:
Volume: $351.4 m^3$

CLARIFIER:
7.6m dia. x 4.6m swd
Volume: $219.1 m^3$
Detention: 3.9 hours
Overflow Rate: $28.4 m^3/m^2.d$

AEROBIC DIGESTER:
Volume: $218.2 m^3$

CHLORINE CONTACT CHAMBER:
Volume: $38.2m^3$
Detention: 40 min.



DESIGN DATA - IMPERIAL

PROJECT Red Lake Twp. WPCP

PROJECT NO. 1-0040-68

TREATMENT Contact Stabilization

DESIGN FLOW 0.250 MGD

BOD - Raw Sewage 510 lb/day

RAW SEWAGE PUMPING:
Pumping Station 1
Two, 430 USGPM at 69' TDH

Pumping Station 2
Two, 125 USGPM at 51' TDH

PRETREATMENT

GRIT CHANNELS:
Two, each 20' x 2' x 3'0" swd
Volume: (each) 650 I. Gal. Detention: (each) 3 min.

BAR SCREENS:
1" x 2" steel bars on 2" centers

BIOLOGICAL TREATMENT

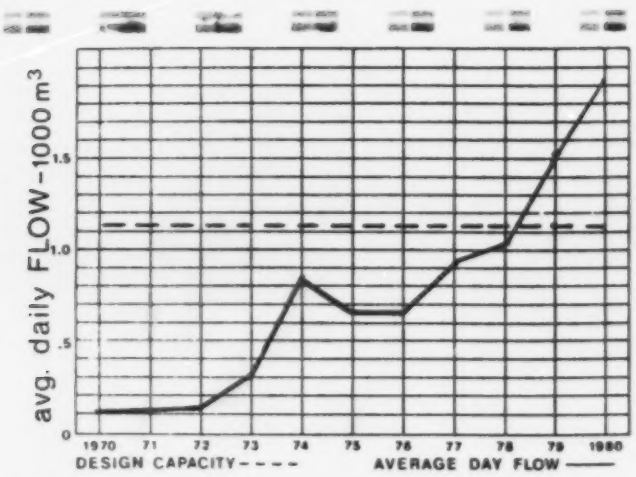
MIXING TANK:
Volume: 33,400 I. Gal.
Contact Time: 2.7 hours

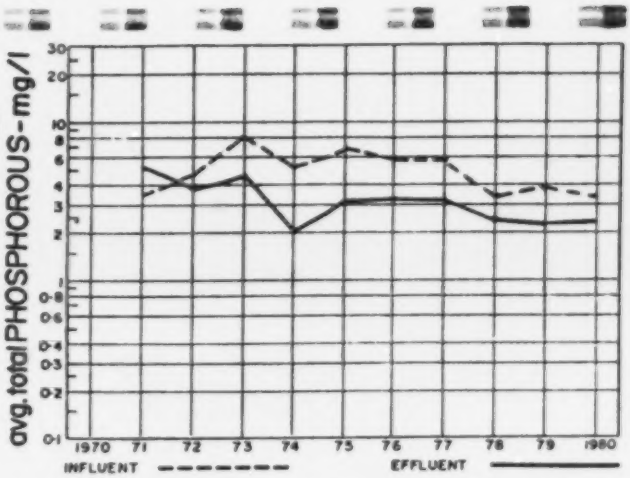
REAERATION TANK:
Volume: 77,400 I. Gal.

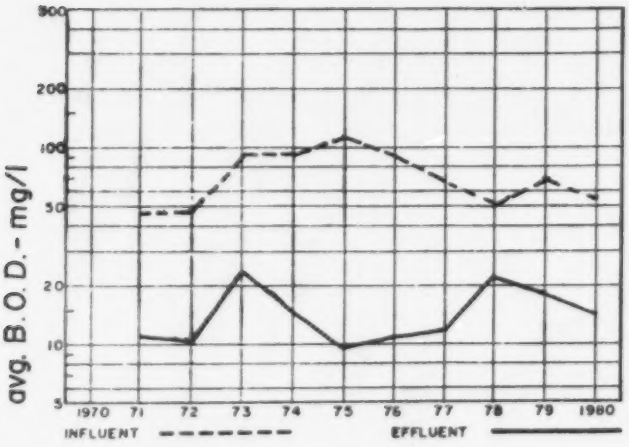
CLARIFIER:
25'0" dia. x 15' swd
Volume: 48,200 I. Gal.
Detention: 3.9 hours
Overflow Rate: 580 I. Gal/ft^2/day

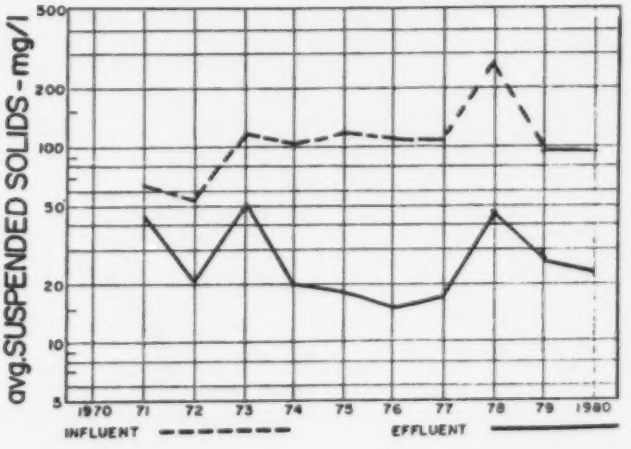
AEROBIC DIGESTER:
Volume: 48,000 I. Gal.

CHLORINE CONTACT CHAMBER:
Volume: 8400 I. Gal.
Detention: 40 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 1100001131 RED LAKE M P C P

MUNICIPALITY : RED LAKE
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 2,179
POPULATION SERVED : 1,200
PERCENT SERVED : 55.0

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.136 1000 M3 DESIGN BOD5 : 204.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	55.969	1.805			38.0	20.0	47	1.0	75.0	20.0	73	3.0	3.3	2.1	36	.067
FEB	53.071	1.830			*	*			75.0	20.0	73	2.9	3.3	2.1	36	.064
MAR	60.993	1.968			*	*			*	*			*	*		
APR	63.576	2.119			45.0	7.2	84	2.4	121.6	16.7	86	6.6	3.3	1.2	63	.134
MAY	44.606	1.439			13.0	5.0	61	.3	50.0	15.0	70	1.5	4.4	2.6	40	.080
JUN	54.009	1.800			47.0	9.0	80	2.0	117.5	20.0	82	5.2	3.7	3.0	18	.038
JUL	54.256	1.750			107.0	26.0	75	4.3	125.0	40.0	68	4.6	4.1	2.5	39	.087
AUG	47.862	1.544			90.0	15.0	83	3.5	170.0	20.0	88	7.1	1.7	4.1	-	-
SEP	50.719	1.690			*	*			*	*			*	*		
OCT	57.689	1.861			25.0	17.0	32	.4	40.0	20.0	50	1.1	3.4	2.8	17	.035
NOV	56.377	1.879			95.0	9.0	90	4.8	140.0	20.0	85	6.7	4.7	2.7	42	.113
DEC	71.844	2.317			58.5	30.0	48	2.0	70.0	40.0	42	2.1	3.3	3.3	-	-
TOTAL	670.971							21.1				41.3				.618
AVERAGE		1.834			57.6	15.3	73		98.4	23.1	76		3.5	2.6	24	
MAXIMUM																
NO. OF SAMPLES					9	9			10	10			10	10		

DESIGN DATA - METRIC

SCHREIBER

PROJECT Municipality of Schreiber

PROJECT NO. 1-0072-67
TREATMENT Extended Aeration

BOD Raw Sewage 450 mg/l
SS Raw Sewage 240 mg/l

PRETREATMENT

Grit Channels

Twin

SECONDARY TREATMENT

Aeration Tanks

Contact Volumes: 94.6 m^3
Reaeration Volume: 220.9 m^3
Loading: 408.0 kg BOD/1000 m^3
Contact Retention: 2 hr.
Reaeration Retention: 4.67 hr.
Total Area: 69.8m^2

Air Supply

Total: 417.9 l/s
No. of blowers: 2
Each blower provides 389.5 l/s @ 845 r.p.m. using a 37.3 kW motor

Secondary Sedimentation

Area: 67.5 m^2
Volume: 248.2 m^3
Loading: surface, 16.8 m^3/m^2-d
Retention: 5.25 hr.

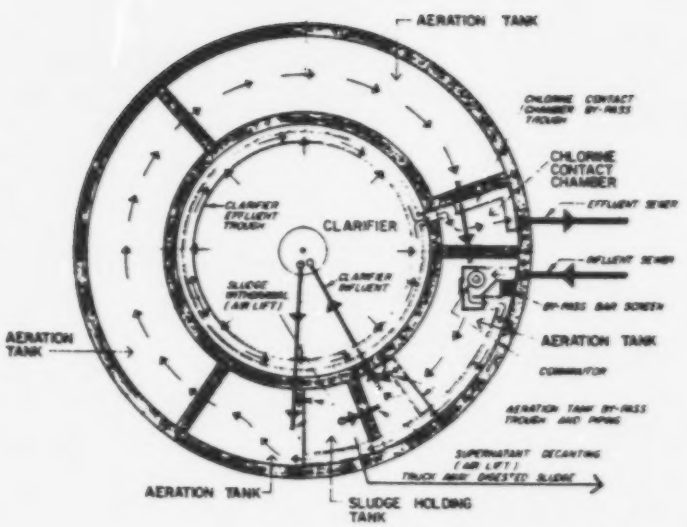
SLUDGE HANDLING

Volume, Digester #1: 150.1m^3
Volume, Digester #2: 78.5m^3
Surface area (Total): 49.5m^2
Loading: .09m^2/ capita
Air Supply: 187.2 l/s

CHLORINATION

Chlorination Contact Chamber

Volume: 23.6m^3
Detention: 30 min.



EXTENDED AERATION

DESIGN DATA - IMPERIAL

PROJECT Municipality of Schreiber

PROJECT NO. 1-0072-67
TREATMENT

BOD Raw Sewage 450 mg/l
SS Raw Sewage 240 mg/l

PRETREATMENT

Grit Channels

Twin

SECONDARY TREATMENT

Aeration Tanks

Contact Volumes: 3333 ft^3 = 20,900 gal.
Reaeration Volume: 7792 ft^3 = 48,600 gal.
Loading: 46 lb. BOD/1000 $ft.^3$
Contact Retention: 2 hr.
Reaeration Retention: 4.67 hr.
Total Area: 741 $ft.^2$

Air Supply

Total: 1000 cfm
No. of blowers: 2
Each blower provides 932 cfm @ 845 r.p.m. using a 50 hp. motor

Secondary Sedimentation

Area: 727 $ft.^2$
Volume: 8760 $Ft.^3$ = 54,600 gal.
Loading: surface, 344 gal./$ft.^2$/day
Retention: 5.25 hr.

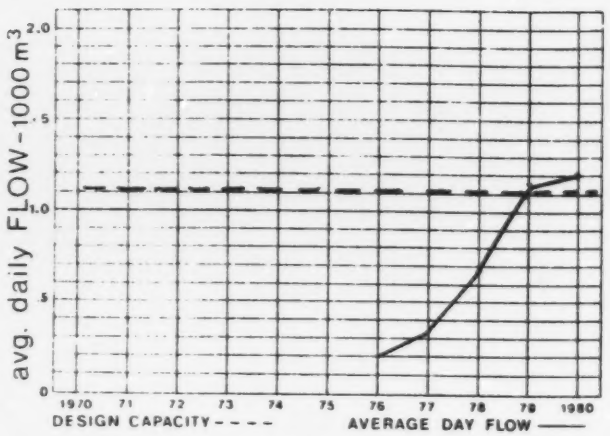
SLUDGE HANDLING

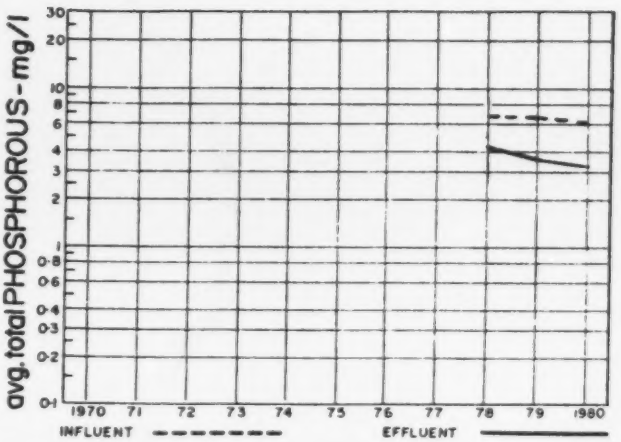
Volume, Digester #1: 5300 $ft.^3$
Volume, Digester #2: 2700 $ft.^3$
Surface area (Total): 533 $ft.^2$
Loading: 3.2 $ft.^3$/ capita
Air Supply: 400 cfm

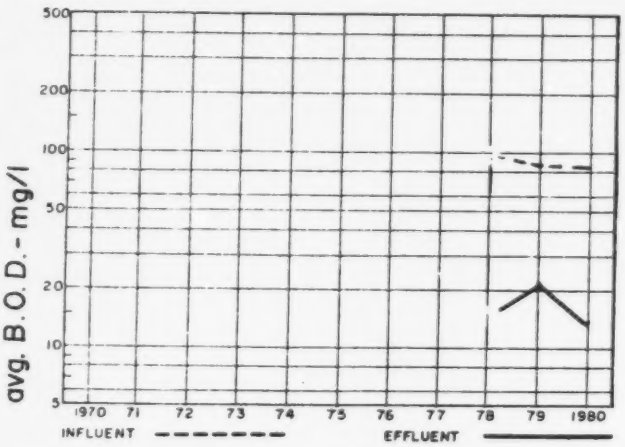
CHLORINATION

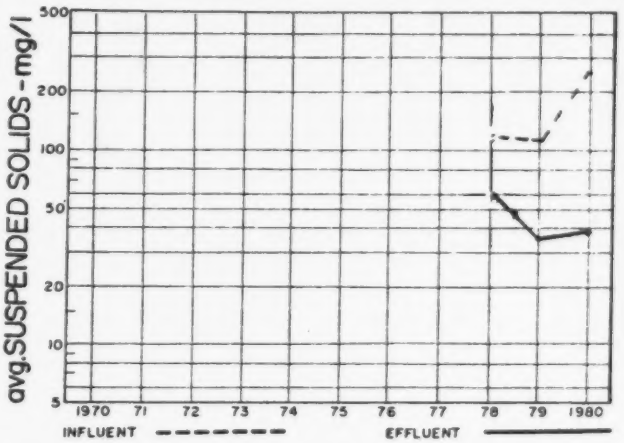
Chlorination Contact Chamber

Volume: 5200 gal.
Detention: 30 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002112 SCHREIBER W P C P

MUNICIPALITY : SCHREIBER
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : EXT AERATION/CONT STABLIZATION

CURRENT POPULATION : 1,986
POPULATION SERVED : 2,000
PERCENT SERVED : 100.7

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.136 1000 M3 DESIGN BOD5 : 450.0 MG/L DESIGN SUSP.SOLIDS : 240.0 MG/L

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	33.399	1.077	1.627		60.0	12.0	80	1.6	80.0	32.0	60	1.6	*	3.4		
FEB	41.823	1.442	2.300		70.0	13.0	81	2.3	120.0	65.0	45	2.3	7.2	2.9	59	.180
MAR	50.829	1.640	2.150		65.0	15.0	76	2.5	90.0	35.0	61	2.7	5.3	2.4	54	.147
APR	45.865	1.529	2.278		70.0	8.0	88	2.8	130.0	25.0	80	4.8	7.0	1.7	75	.243
MAY	41.860	1.360	2.300		59.0	12.0	79	1.9	123.0	35.0	71	3.6	3.2	1.3	59	.080
JUN	33.181	1.106	1.627		100.0	7.5	92	3.0	1600.0	25.0	98	52.2	4.9	4.7	4	.007
JUL	33.935	1.131	2.305		126.7	38.3	69	3.0	218.3	61.7	71	5.3	6.7	4.1	38	.088
AUG	33.690	1.082	1.386		105.0	12.8	87	3.1	110.0	22.0	80	2.9	7.3	3.8	47	.118
SEP	31.631	1.054	1.318		63.7	13.5	78	1.5	110.0	55.0	50	1.7	6.1	3.7	39	.076
OCT	31.579	1.019	1.336		126.7	12.2	90	3.6	160.0	36.7	77	3.8	7.1	3.7	47	.107
NOV	31.222	1.040	1.386		72.5	11.2	84	1.9	125.0	35.0	72	2.8	6.9	3.9	43	.094
DEC	34.583	1.116	1.596		92.5	13.5	85	2.7	200.0	50.0	75	5.1	4.9	3.0	38	.066
TOTAL	443.597							30.3				89.3				1.206
AVERAGE		1.216			84.2	14.0	83		255.5	39.7	84		6.0	3.2	46	
MAXIMUM			2.305													
NO. OF SAMPLES					20	20			22	20			19	20		

MODIFIED SECONDARY TREATMENT PLANT

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Ministry of the Environment
Ontario

Southeastern Region

④

HAWKESBURY

DESIGN DATA - METRIC

PROJECT: Town of Hawkesbury

PROJECT NO: 1-0131-67

POPULATION: 17,500

TREATMENT: Conventional Activated Sludge (Partial Nitrification)

DESIGN FLOW: Dry Weather Flow - 12.14 $10^3 m^3/d$
Wet Weather Flow - 36.37 $10^3 m^3/d$

DESIGN BOD:

DESIGN SS:

PUMPING STATIONS

One pumping station located at Main and Phillippe Street, 3 pumps each 252.4 l/s @ 37.29 kW.

PRIMARY TREATMENT

Grit Removal
Screening: Mechanically cleaned
Comminutor:
Detritor: One, 4.9 m x 4.9 m x 0.8 m deep
Primary Settling Tank: settling rate - 70.40 $m^3/m^2 \cdot d$

SECONDARY TREATMENT

Aeration Tank

Size: Three, 25.0 m_3x7.3 m x 4.6 m deep
Max. Flow: 24.23 $10^3 m^3/d$
Loading: 13.6 kg. BOD / 28.32 m^3
Return Activated Sludge Flow: 12.14 $10^3 m^3/d$

BLOWERS

Size: Two @ 1254 l/s, 112 kW for aeration tanks
Two @ 1254 l/s, 93 kW for aerobic digesters

FINAL SETTLING TANK

Size: Three, 41.1 m x 7.3 m x 3.05 m deep
Rate: 58.67 $m^3/m^2/d$

CHLORINATION

Chlorine Contact Chamber
Gas clorinator capacity: 31.55 kg
Detention: 15 min. in tank and outfall

PHOSPHORUS REMOVAL

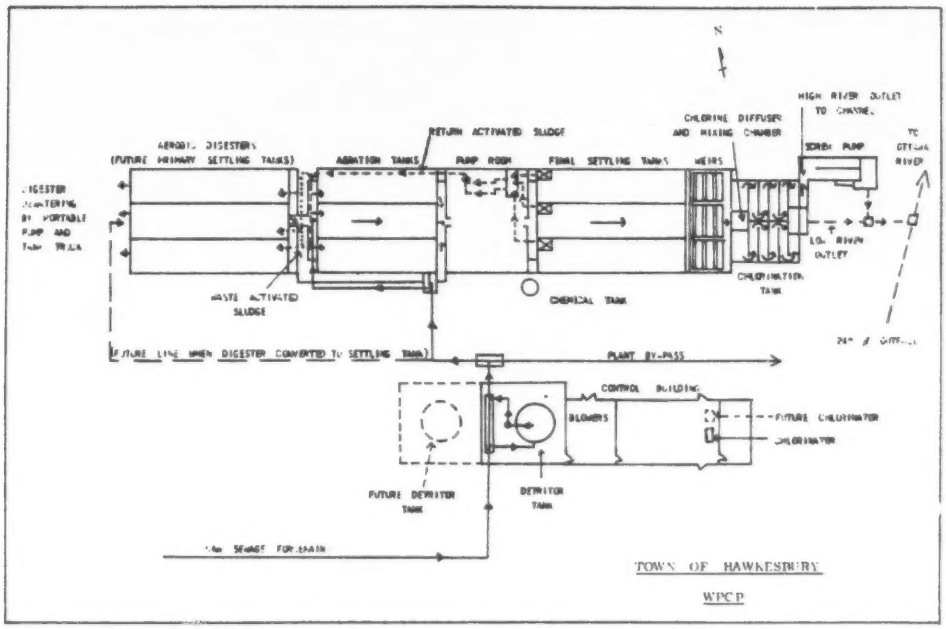
Chemical Storage Tank Size: 22.73 m^3
Pumps: Two chemical feed pumps @ 1.77 l/s each

AEROBIC DIGESTERS
(Future primary clarifiers)

Size: Three 34.1 m x 7.3 m x 3.7 m
Volume: 2731 m^3
Storage: approx. 70 days

OUTFALL

Size: 370.6 m of 610 mm dia. concrete pipe
- To Ottawa River



DESIGN DATA - IMPERIAL

HAWKESBURY

PROJECT: Town of Hawkesbury

PROJECT NO: 1-0131-67

POPULATION: 17,500

TREATMENT: Conventional Activated Sludge (Partial Nitrification)

DESIGN FLOW: Dry Weather Flow - 2.67 MIGD
Wet Weather Flow - 8.00 MIGD

DESIGN BOD:
DESIGN SS:

PUMPING STATIONS

One pumping station located at Main and Phillippe Street, 3 pumps each 4,000 us gpm @ 50 HP

PRIMARY TREATMENT

Grit Removal
Screening: mechanically cleaned
Comminutor:
Detritor: One, 16' x 16' x 2'9" deep
Primary Settling Tank: settling rate - 1200 us GPD/ sq.ft.

SECONDARY TREATMENT

AERATION TANK
Size: Three, 82' x 24' x 15' deep
Max. Flow: 5.33 MIGD
Return Activated Sludge Flow: 2.67 MIGD
Loading: 30 lbs. BOD/100 cu. ft.

BLOWERS

Size: Two @ 3000 scfm, 150 Hp for aeration tanks
Two @ 3000 scfm, 125 Hp for aerobic digesters

FINAL SETTLING TANK

Size: Three, 135' x 24' x 10' deep
Rate: 1,000 US gpd/sq.ft.

CHLORINATION

Chlorine Contact Chamber
Gas clorinator capacity: 500 lb
Detention: 15 min. in tank and outfall

PHOSPHORUS REMOVAL

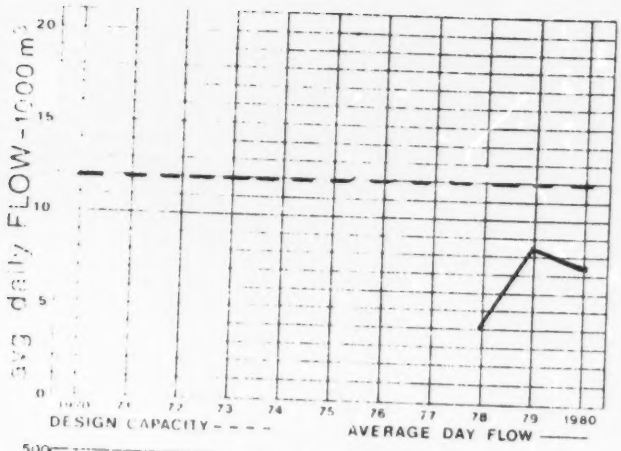
Chemical Storage Tank Size: 5000 gal
Pumps: Two chemical feed pumps @ 28 US gpm each

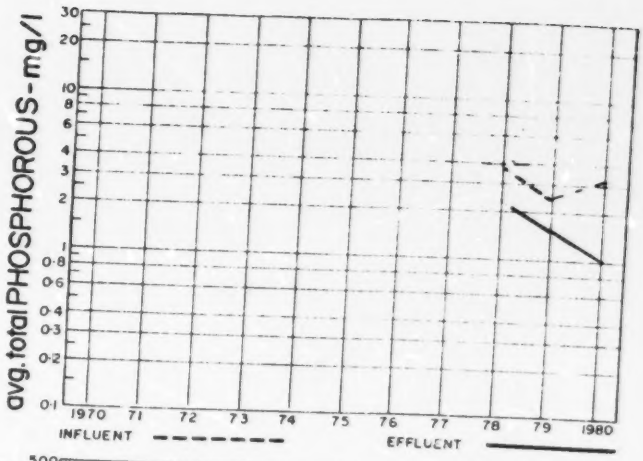
AEROBIC DIGESTERS
(Future primary clarifiers)

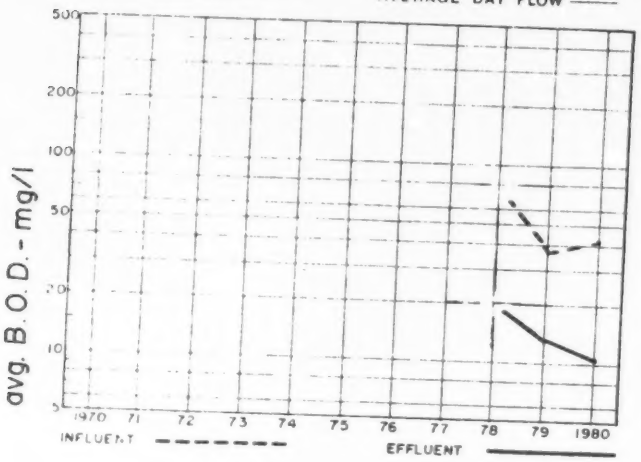
Size: Three, 112' x 24' x 12'
Volume: 96,500 cu. ft.
Storage: approx. 70 days

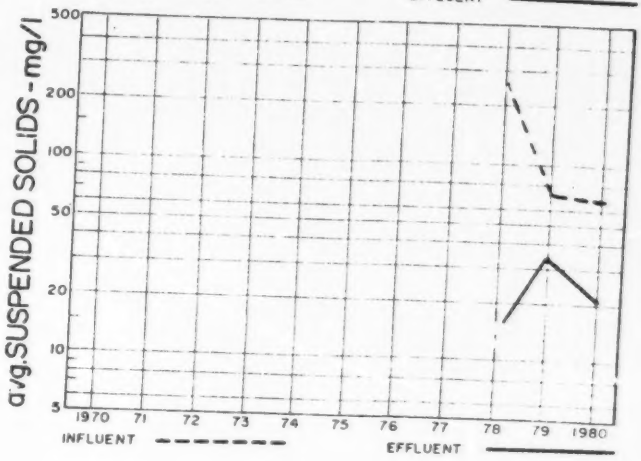
OUTFALL

Size: 1216' of 24" dia concrete pipe
- To Ottawa River









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110002283 HAWKESBURY MPCP

MUNICIPALITY : HAWKESBURY
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : MODIFIED SECONDARY PHOSPHORUS REMOVAL

CURRENT POPULATION : 9,804
POPULATION SERVED : 9,804
PERCENT SERVED : 100.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

(* DATA NOT AVAILABLE)

DESIGN CAPACITY : 12.274 1000 M3 DESIGN BODS : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	180.000	5.804	6.516		35.0	17.0	51	3.2	58.0	54.0	6	.7	2.4	1.4	41	.180
FEB	137.406	4.738	9.683		33.0	9.0	72	3.2	129.0	25.0	80	14.2	5.9	3.3	44	.357
MAR	209.151	6.747	22.210		54.0	12.0	77	8.7	174.0	24.0	86	31.3	3.6	2.1	41	.314
APR	275.915	9.197	1.722		56.0	26.0	53	8.2	47.0	27.0	42	5.5	4.1	1.0	75	.855
MAY	220.400	7.100	14.860		74.0	11.0	85	13.8	62.0	25.0	59	8.1	2.9	.7	75	.485
JUN	171.800	5.800	1.722		26.0	8.5	67	3.0	35.0	9.0	74	4.4	2.2	.2	90	.344
JUL	262.000	8.451	14.370		28.0	7.0	75	5.5	28.0	14.0	50	3.6	2.0	.5	75	.393
AUG	265.700	8.600	17.730		25.0	5.0	80	5.3	24.0	14.0	41	2.6	1.7	.3	82	.372
SEP	234.769	7.826	15.809		56.0	7.0	87	11.5	83.0	12.0	85	16.6	3.8	.6	84	.751
OCT	278.576	8.986	14.802		33.0	5.0	84	7.8	68.0	12.0	82	15.6	2.6	.4	84	.613
NOV	260.230	8.674	16.500		58.0	7.0	87	13.2	41.0	10.0	75	8.0	*	*		
DEC	244.800	7.897	14.400		*	*			*	*			*	*		
TOTAL	2740.747							83.8				111.1				4.664
AVERAGE		7.485			43.4	10.4	76		68.0	20.5	69		3.1	1.0	66	
MAXIMUM			22.210													
NO. OF SAMPLES					24	25			75	67			45	48		

HIGH RATE ACTIVATED SLUDGE PLANTS

Ministry of the Environment
Ontario

Southwestern Region

①

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Ministry of the Environment
Ontario

Southwestern Region

①

DESIGN DATA - METRIC

MEAFORD

PROJECT: Town of Meaford WPCP

PROJECT NO: 1-0003-66

TREATMENT: High Rate Activated Sludge

DESIGN FLOW: 3.910 $10^3 m^3/d$

BOD - Raw Sewage 400 mg/l
SS - Raw Sewage 200 mg/l

COMMINUTOR

Type: Condux type 400
Max. Capacity 11.729 $10^3 m^3/d$

AERATION TANKS

2 tanks, each 9.14m dia x 5.87m swd
Capacity: 772.820 m^3 total
Detention: 4.7 hours

Aerators

Type: 2 mechanical Ames-Crosta driven by 37.3 kw electric motors

SECONDARY CLARIFIER

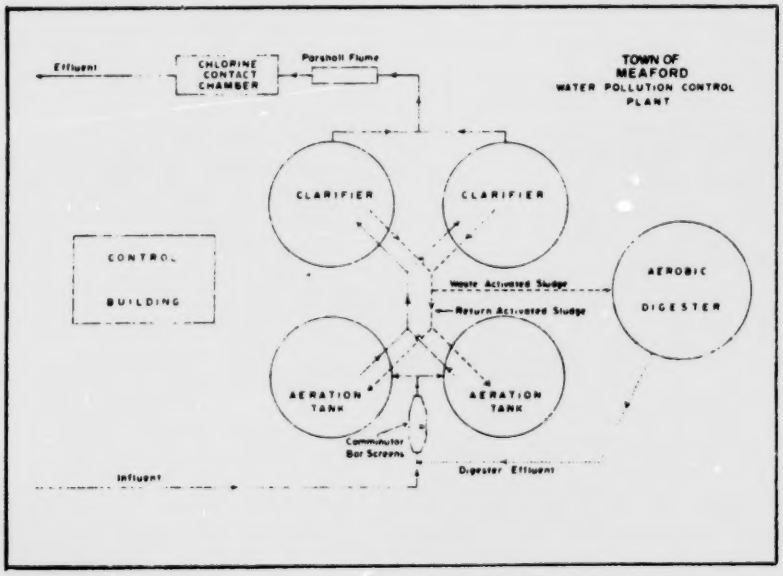
2 clarifiers 12.19 m dia x 3.28 avg. swd
Capacity: 763.73 m^3 total
Detention: 4.7 hours
Loading: Surface 16.622 $m^3/m^2 d$
Return Sludge Pumps: 205.904 l/s
@ 9.14m TDH

CHLORINE CONTACT CHAMBER

Size: 7.32 m x 2.44 m x 6.5 m, 38.186m^3
Detention time: 14 min.

AEROBIC DIGESTER

Dimensions: 15.24m dia x 5.64m avg swd
Capacity: 103.194 m^3
Aerator: Ames-Crosta mechanical



DESIGN DATA - IMPERIAL

PROJECT Town of Meaford WPCP

PROJECT NO. 1-0003-66

TREATMENT High Rate Activated Sludge

DESIGN FLOW 0.86 mgd

BOD - RAW SEWAGE 400 mg/l

SS - RAW SEWAGE 200 mg/l

COMMINUTOR

Type: Condux type 400
Max. Capacity - 2.58 mgd

AERATION TANKS

2 tanks, each 30'0" dia x 19'3" swd
Capacity: 170,000 I.G. total
Detention: 4.7 hours

Aerators

Type: 2 mechanical Ames-Crosta driven by 50 hp electric motors

SECONDARY CLARIFIER

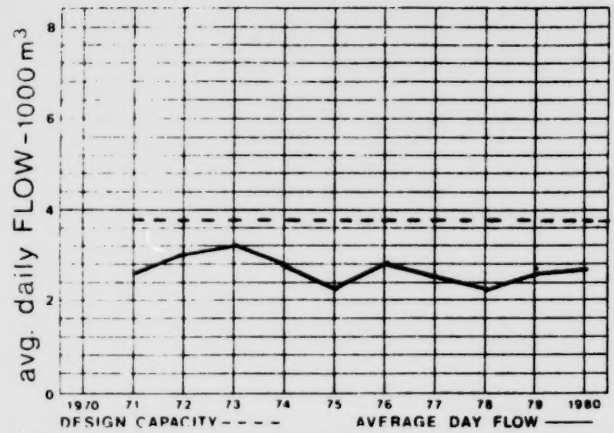
2 clarifiers 40'0" dia x 10'9" avg. swd
Capacity: 168,000 I.G. total
Detention: 4.7 hours
Loading: Surface 340 gal ft²/day
Return Sludge Pumps: 2, 720 IGPM
@ 30' +/h

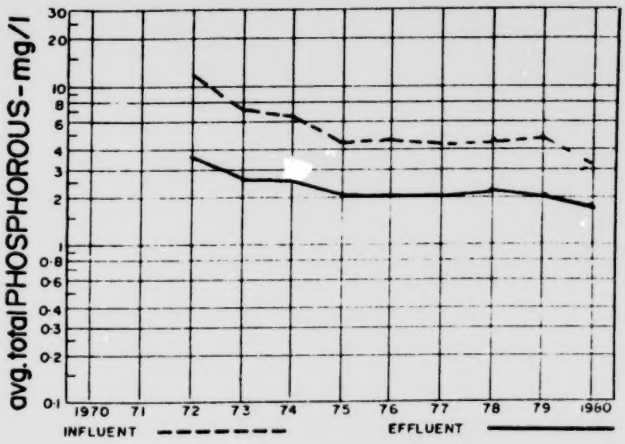
CHLORINE CONTACT CHAMBER

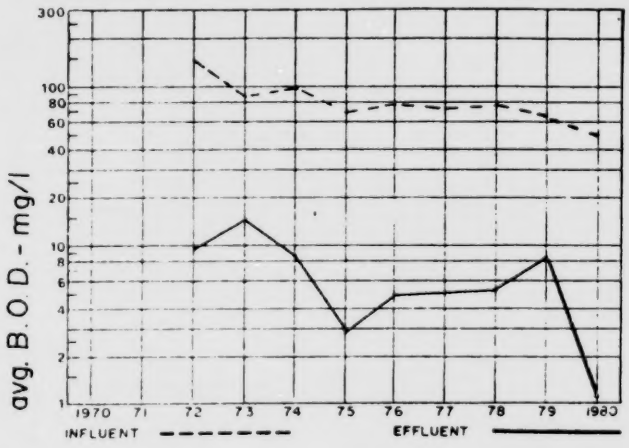
Size: 24' x 8' x 6' 6", 8400 gallons
Detention Time: 14 min.

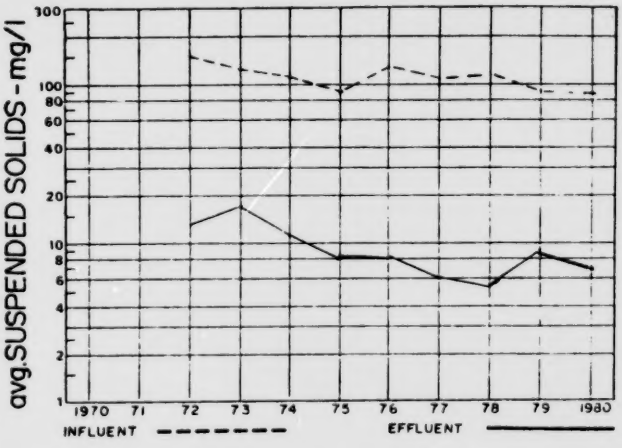
AEROBIC DIGESTER

Dimensions: 50'0" dia x 18'6" avg swd.
Capacity: 227,000 I.G.
Aerator: Ames-Crosta mechanical









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000445 HEAFORD MPCP

MUNICIPALITY : HEAFORD
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : HIGH RATE
EXTENDED AERATION

CURRENT POPULATION : 4,277
POPULATION SERVED : 3,200
PERCENT SERVED : 74.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.909 1000 M3 DESIGN BOD5 : 400.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	85.548	2.759	3.658	13.630	62.0	7.7	87	4.6	120.0	5.2	95	9.8	4.5	2.0	56	.218
FEB	58.159	2.005	3.118	13.630	86.0	4.9	94	4.7	95.0	9.5	90	4.9	5.2	2.7	47	.142
MAR	92.843	2.995	5.889	13.630	80.6	7.2	91	6.8	381.6	9.0	97	34.5	3.7	1.7	54	.186
APR	104.112	3.422	6.088	13.630	36.0	7.5	79	2.9	35.5	6.5	81	3.0	2.3	1.5	32	.077
MAY	82.825	2.671	4.806	13.630	32.0	6.8	78	2.0	40.7	21.0	48	1.6	2.7	1.9	29	.066
JUN	83.433	2.781	5.626	13.630	48.0	3.4	92	3.7	63.5	3.5	94	5.0	3.6	2.4	33	.100
JUL	98.477	3.177	4.289	13.630	18.0	3.3	81	1.4	47.1	4.9	89	4.1	2.0	1.8	12	.025
AUG	80.234	2.588	3.975	13.630	27.0	4.0	85	1.8	55.1	4.0	92	4.1	3.0	2.6	13	.032
SEP	85.231	2.841	4.502	13.630	52.7	2.7	94	4.2	69.5	2.0	97	5.7	3.4	1.6	52	.155
OCT	94.053	3.034	6.165	13.630	36.0	5.3	85	2.8	46.8	7.1	84	3.7	2.8	1.9	31	.083
NOV	78.097	2.603	3.138	13.630	66.0	5.0	92	4.7	43.9	3.6	91	3.1	3.1	1.6	46	.112
DEC	83.573	2.785	5.307	13.630	65.0	5.6	91	4.9	67.1	4.3	93	5.2	3.7	1.6	56	.176
TOTAL	1026.585							45.1				85.1				1.372
AVERAGE		2.805			50.7	5.2	89		88.8	6.7	92		3.3	1.9	41	
MAXIMUM			6.165	13.630												
NO. OF SAMPLES					25	25			25	25			25	25		

Ministry of the Environment
Ontario

West Central Region

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REGIONAL OFFICE

HAMILTON
119 King St. W.
P.O. BOX 2112
811-521-7640

DISTRICT OFFICES

Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

Ministry of the Environment
Ontario

West Central Region

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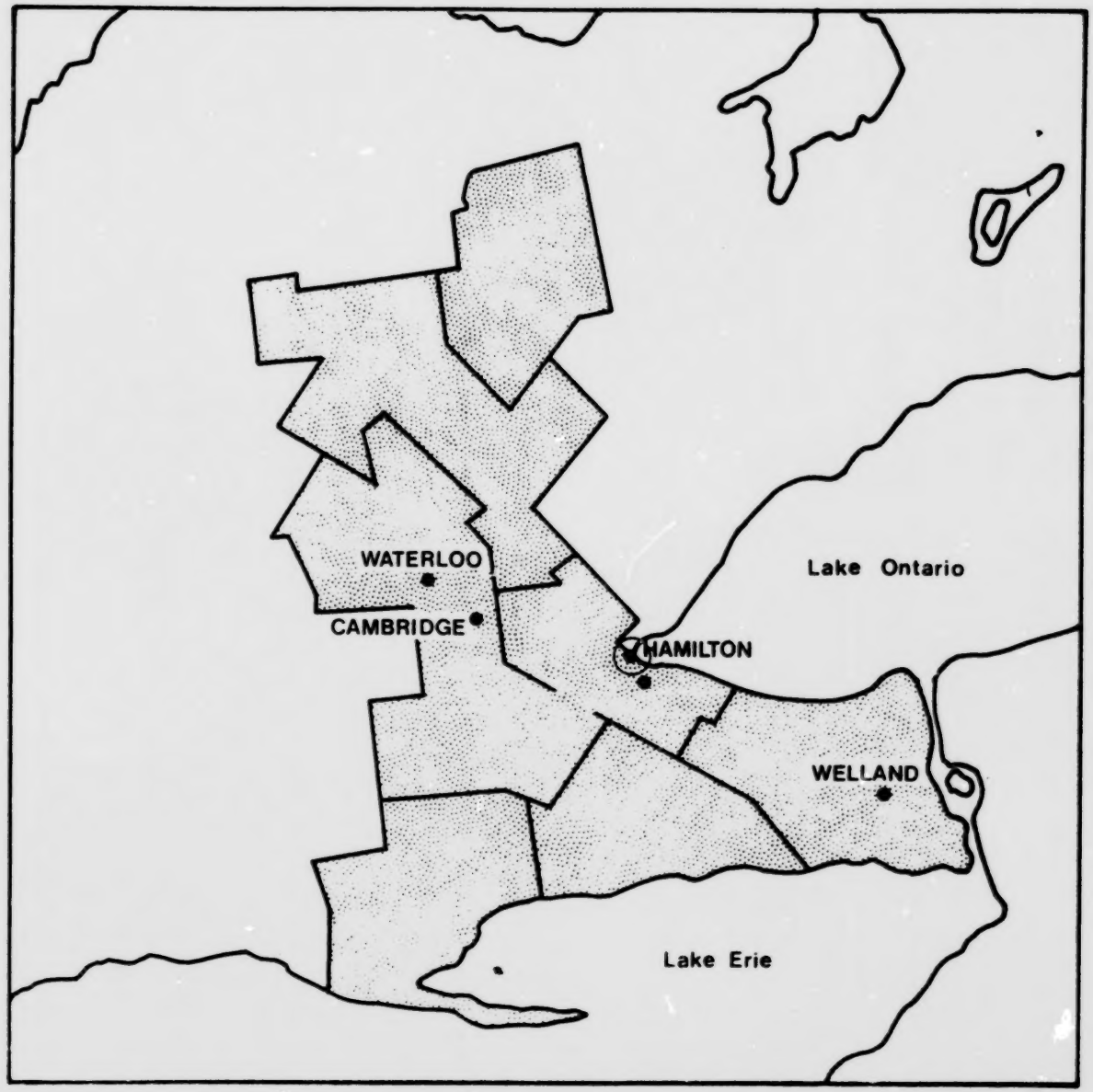


DESIGN DATA - METRIC

CAMBRIDGE (HESPELER)

Project: City of Cambridge (Hespeler) WPCP
Project No.: 1-0033-66
Treatment: High Rate Activated Sludge
Design Flow: 9.319 $10^3 m^3/d$

PRETREATMENT

Raw Sewage Pumps:
One: Crane Deming Size: 25.24 l/s
Three: Crane Deming Size: 18.93 l/s

Comminutor
Type: CORD 16B

Air Degritter
Size: 0.6 x 4.3m x 2.4m swd
Volume: 37.28 m^3
Retention: 5.8 min.
Mechanism: CHICAGO PUMP

BIOLOGICAL TREATMENT

Aeration Tanks
Two, 45.7m x 2.2m x 4.1m (avg)
Volume: 831.918 m^3
Retention: 2.1 hours

Clarifiers
Two, 45.7m x 3.7m x 3.7m
Volume: 62.789 m^3
Retention: 2.4 hours
Overflow rate: 26.644 $m^3/m^2.d$

Aerobic Digesters - Stage 1
Size: Two, 22.7m x 4.5m x 4.1m awl
Volume: 1136.5m^3

Aerobic Digesters - Stage 2
Size: Two, 22.7m x 4.5m x 4.1m awl
Volume: 1136.5m^3

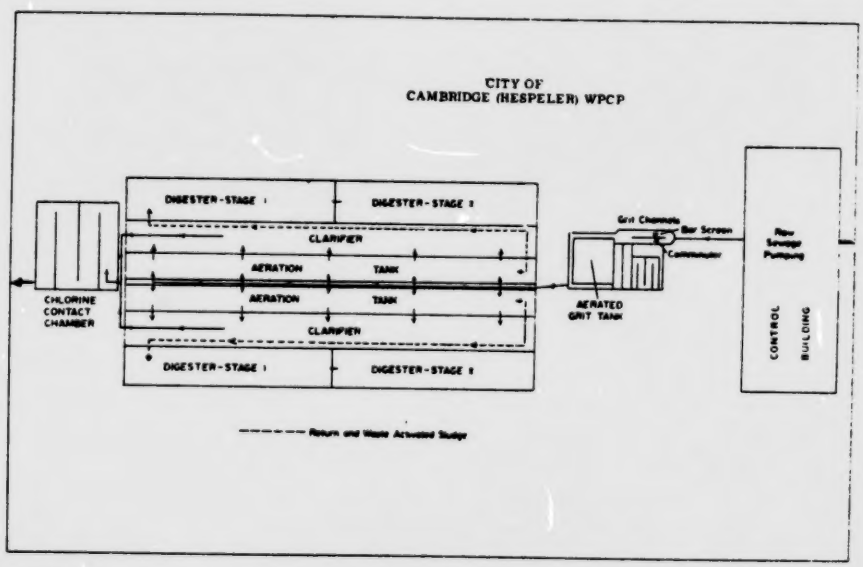
Blowers: Type: Three SUTORBILT 3100
Size: 1484 l/s 111.86 kW motors

Sludge Pump: Type: MEYERS 40 MPD
Size: 5.59 kW

CHLORINATION

Chlorine Contact Chamber
9.1m x 8.5m x 2.5m (4-pass)
Volume: 213.7 m^3
Retention: 33 min.

Chlorinator
Type: W & T A811
Capacity: 226.8 kg/day



DESIGN DATA - IMPERIAL

Project:	City of Cambridge (Heapeler) WPCP
Project No:	1-0033-66
Treatment:	High Rate Activated Sludge
Design Flow:	2.05 MIGD
BOD:	Raw Sewage - 4535 lb/day
SS:	Raw Sewage - 4080 lb/day

PRETREATMENT

Raw Sewage Pumps:
One: Crane Deming Size: 400 USGPM
Three: Crane Deming Size: 300 USGPM

Comminutor:
Type: CORD 16B

Air Degritter:
Size: 11.75' x 14' x 8' swd
Volume: 8200 I. Gal. Retention: 5.8 min.
Mechanism: CHICAGO PUMP

BIOLOGICAL TREATMENT

Aeration Tanks:
Two, 150' x 7.25' x 13.5' (avg)
Volume: 183,000 I. Gal. Retention: 2.1 Hours

Clarifiers:
Two, 150' x 12.25' x 12.0' awl
Volume: 206,000 I. Gal.
Retention: 2.4 hours
Overflow rate: 545 gpd/sq.ft.

Aerobic Digesters - Stage 1:
Size: Two, 74.5' x 14.75' x 13.5' awl
Volume: 250,000 I. Gal.

Aerobic Digesters - Stage 2:
Size: Two, 74.5' x 14.75' x 13.5' awl
Volume: 250,000 I. Gal.

Blowers: Type: Three SUTORBILT 3100
Size: 3550 cfm. 150 HP Motors.

Sludge Pump: Type: MEYERS 40 MPD
Size: 7½ HP

CHLORINATION

Chlorine Contact Chamber:
30' x 28' x 9' (4-pass)
Volume: 47,000 I. Gal.
Retention: 33 min.

Chlorinator:
Type: W & T A811
Capacity: 500 lb/day

Ministry of the Environment
Ontario

West Central Region

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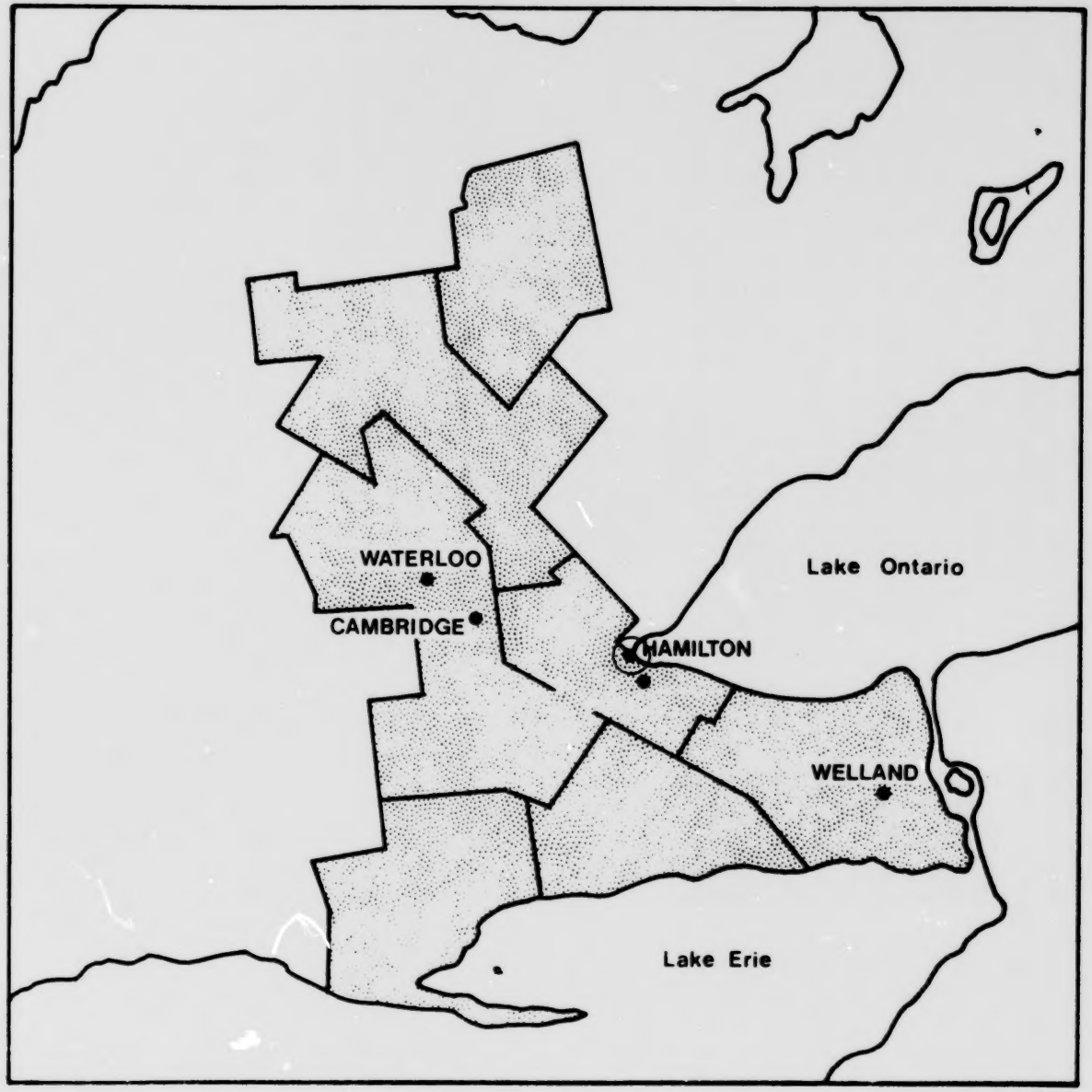


DESIGN DATA - METRIC

CAMBRIDGE (HESPELER)

Project: City of Cambridge (Hespeler) WPCP
Project No.: 1-0033-66
Treatment: High Rate Activated Sludge
Design Flow: 9.319 $10^3 m^3/d$

PRETREATMENT

Raw Sewage Pumps:
One: Crane Deming Size: 25.24 l/s
Three: Crane Deming Size: 18.93 l/s

Comminutor
Type: CORD 168

Air Degritter
Size: 0.6 x 4.3m x 2.4m swd
Volume: 37.28 m^3
Retention: 5.8 min.
Mechanism: CHICAGO PUMP

BIOLOGICAL TREATMENT

Aeration Tanks
Two, 45.7m x 2.2m x 4.1m (avg)
Volume: 831.918 m^3
Retention: 2.1 hours

Clarifiers
Two, 45.7m x 3.7m x 3.7m
Volume: 62.789 m^3
Retention: 2.4 hours
Overflow rate: 26.644 $m^3/m^2.d$

Aerobic Digesters - Stage 1
Size: Two, 22.7m x 4.5m x 4.1m awl
Volume: 1136.5m^3

Aerobic Digesters - Stage 2
Size: Two, 22.7m x 4.5m x 4.1m awl
Volume: 1136.5m^3

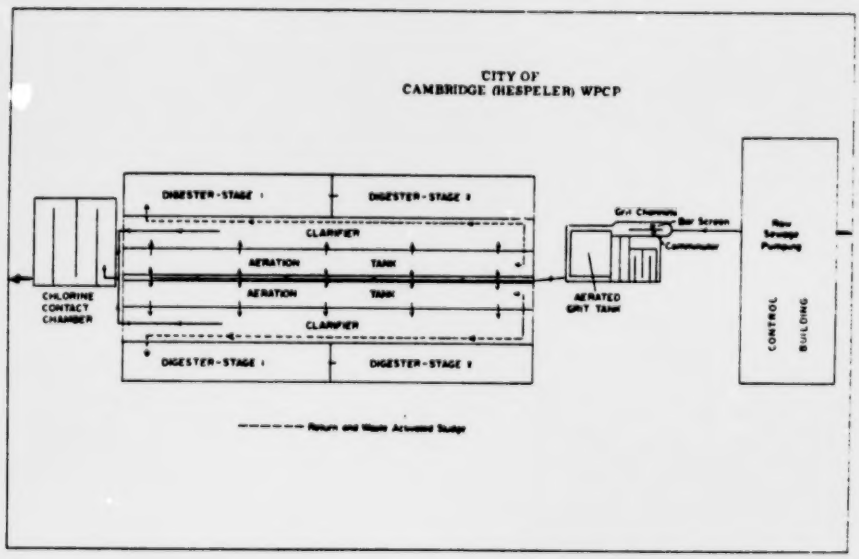
Blowers: Type: Three SUTORBILT 3100
Size: 1484 l/s 111.86 kW motors

Sludge Pump: Type: MEYERS 40 MPD
Size: 5.59 kW

CHLORINATION

Chlorine Contact Chamber
9.1m x 8.5m x 2.5m (4-pass)
Volume: 213.7 m^3
Retention: 33 min.

Chlorinator
Type: W & T A811
Capacity: 226.8 kg/day



DESIGN DATA - IMPERIAL

Project: City of Cambridge (Hespeler) WPCP

Project No: 1-0033-66
Treatment: High Rate Activated Sludge
Design Flow: 2.05 MIGD
BOD: Raw Sewage - 4535 lb/day
SS: Raw Sewage - 4080 lb/day

PRETREATMENT

Raw Sewage Pumps:
One: Crane Deming Size: 400 USGPM
Three: Crane Deming Size: 300 USGPM

Comminutor:
Type: CORD 16B

Air Degritter:
Size: 11.75' x 14' x 8' swd
Volume: 8200 I. Gal. Retention: 5.8 min.
Mechanism: CHICAGO PUMP

BIOLOGICAL TREATMENT

Aeration Tanks:
Two, 150' x 7.25' x 13.5' (avg)
Volume: 183,000 I. Gal. Retention: 2.1 Hours

Clarifiers:
Two, 150' x 12.25' x 12.0' awl
Volume: 206,000 I. Gal.
Retention: 2.4 hours
Overflow rate: 545 gpd/sq.ft.

Aerobic Digesters - Stage 1:
Size: Two, 74.5' x 14.75' x 13.5' awl
Volume: 250,000 I. Gal.

Aerobic Digesters - Stage 2:
Size: Two, 74.5' x 14.75' x 13.5' awl
Volume: 250,000 I. Gal.

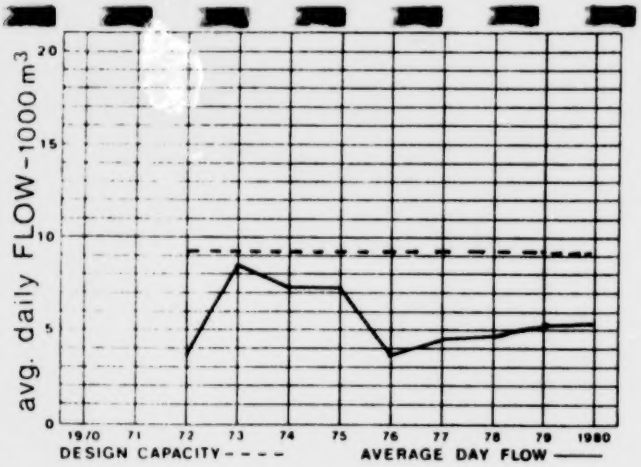
Blowers: Type: Three SUTORBILT 3100
Size: 3550 cfm. 150 HP Motors.

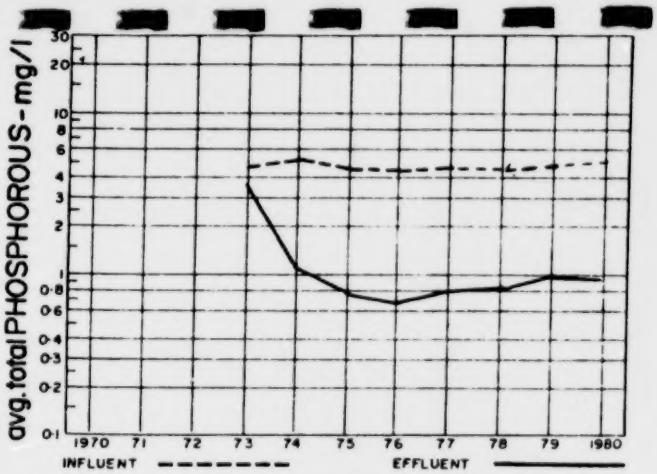
Sludge Pump: Type: MEYERS 40 MPD
Size: 7½ HP

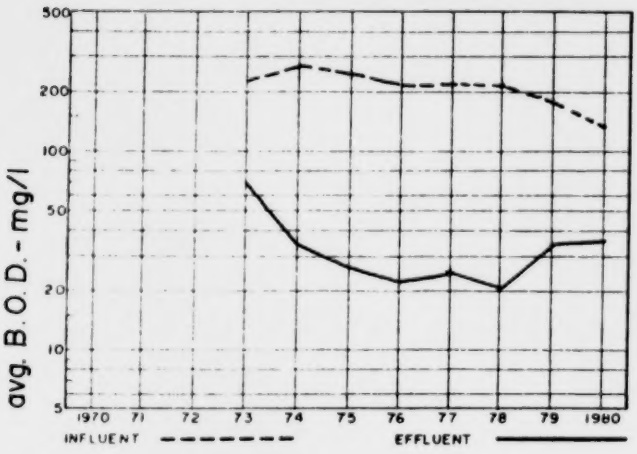
CHLORINATION

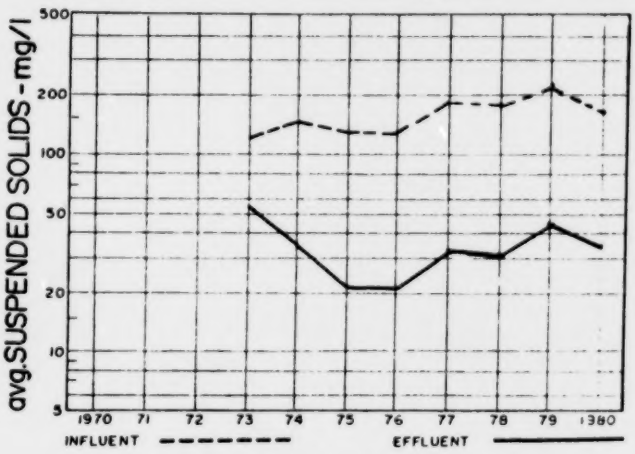
Chlorine Contact Chamber:
30' x 28' x 9' (4-pass)
Volume: 47,000 I. Gal.
Retention: 33 min.

Chlorinator:
Type: W & T A811
Capacity: 500 lb/day









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001033 HESPELER WPCP

MUNICIPALITY : CAMBRIDGE (HESPELER)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : HIGH RATE
PHOSPHORUS REMOVAL

CURRENT POPULATION : 73,314
POPULATION SERVED : 915
PERCENT SERVED : 1.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 9.319 1000 M3 DESIGN BOD5 : 260.0 MG/L DESIGN SUSP.SOLIDS : 215.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	210.804	6.800	8.324	17.730	107.0	20.0	81	18.3	152.0	28.0	81	26.1	4.2	.8	80	.717
FEB	181.229	6.250	6.887	17.730	177.0	33.0	81	26.0	148.0	33.0	77	20.8	4.3	1.1	74	.580
MAR	207.883	6.706	9.547	17.730	116.0	40.0	65	15.7	160.0	40.0	75	24.9	5.0	1.1	78	.811
APR	211.208	7.040	9.219	17.270	105.0	50.0	52	11.6	154.0	50.0	67	21.9	4.3	.8	81	.739
MAY	192.505	6.210	8.424	22.730	110.0	45.0	59	12.5	132.0	45.0	65	16.7	5.4	.8	85	.886
JUN	142.868	4.762	5.851	14.090	152.0	28.0	81	17.7	188.0	32.0	82	22.2	4.6	.7	84	.557
JUL	124.860	4.030	5.010	14.100	86.0	16.0	81	8.7	125.0	13.0	89	13.9	4.1	.4	90	.462
AUG	135.810	4.380	6.120	14.100	113.0	17.0	84	13.0	144.0	26.0	81	16.0	5.4	.7	87	.638
SEP	132.670	4.420	5.540	16.800	232.0	41.0	82	25.3	213.0	39.0	81	23.0	5.7	1.2	78	.597
OCT	142.710	4.600	5.370	13.600	208.0	54.0	74	21.9	149.0	28.0	81	17.2	4.6	1.1	76	.499
NOV	132.900	4.430	5.390	13.600	190.0	44.0	76	19.4	216.0	52.0	75	21.7	11.1	1.7	84	1.249
DEC	157.850	5.090	5.910	15.500	120.0	38.0	68	12.9	155.0	22.0	85	20.9	5.6	1.2	78	.695
TOTAL	1973.297							203.5				246.0				8.430
AVERAGE		5.393			143.0	35.5	75		161.3	34.0	78		5.3	.9	81	
MAXIMUM			9.547	22.730												
NO. OF SAMPLES					47	139			47	140			47	117		

Ministry of the Environment
Ontario

Central Region

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REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386

Ministry of the Environment
Ontario

Central Region

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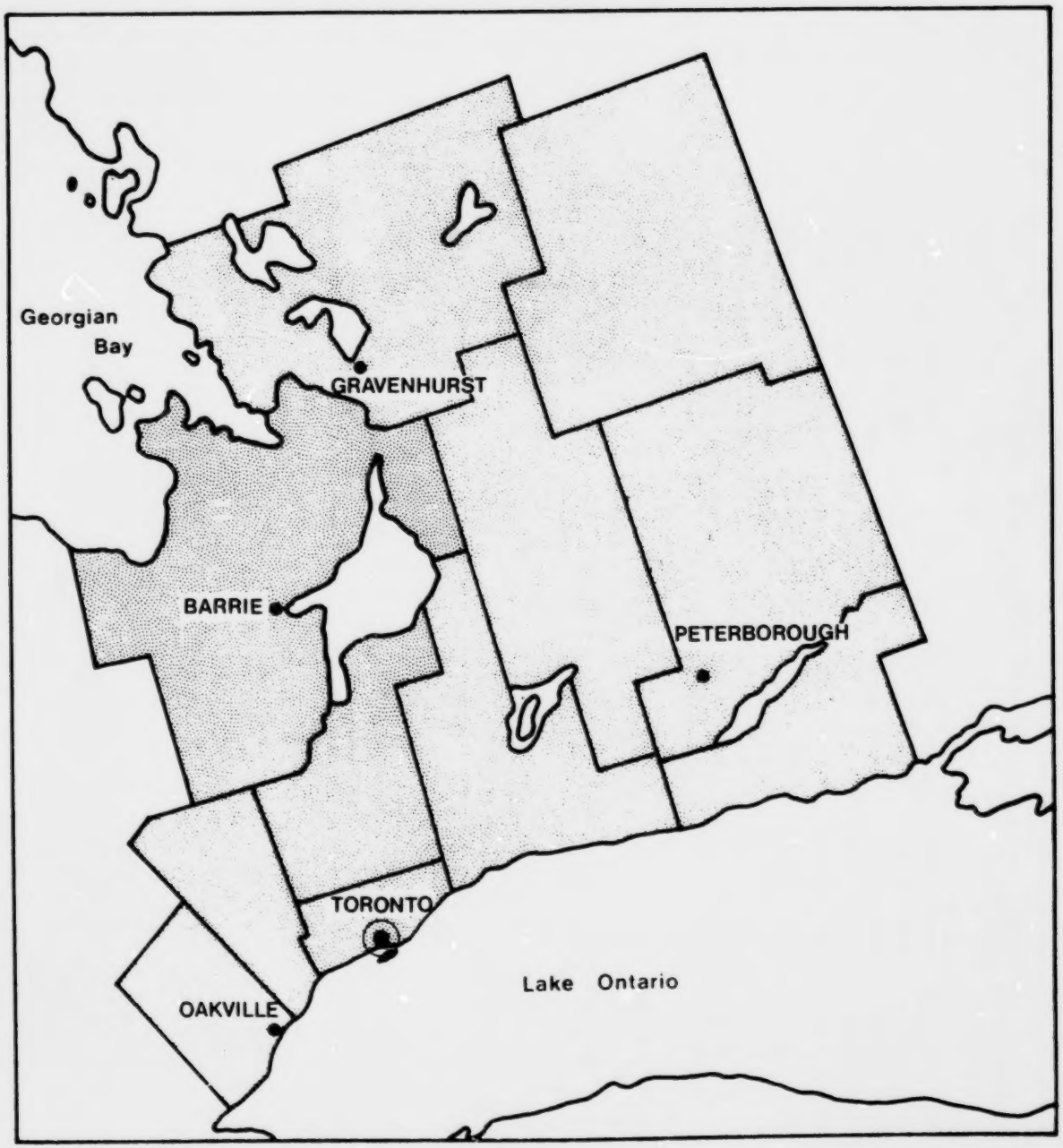


DESIGN DATA - METRIC

BRADFORD

Project: Bradford (town) WPCP
Project No.: 1-0035-66
Treatment: High Rate Activated Sludge
Design Flow: 3.637 $10^3 m^3/d$
BOD: Raw Sewage 230 mg/l
SS: Raw Sewage 275 mg/l

PRETREATMENT

COMMINUTION CHAMBER:

Two channels 0.6m W x 2.0m x 2.5m (avg)
with comminutors

BAR SCREEN:

In channel between comminutors

PHOSPHORUS REMOVAL:

AIR DEGRITTER:

Volume: 34.550 m^3
Detention: 13 min
Size: 2.97m x 4.52m x 2.9m (avg)

BIOLOGICAL TREATMENT

AERATION TANKS:

Two, 5.33m x 18.9m x 3.89m swd
Volume: 786.458 m^3
Detention: 4.8 hours

SETTLING TANKS:

Two, 4.27m x 18.92m x 3.89m (avg)
Volume: 481.876 m^3
Detention: 3.0 hour
Overflow rate: 24.2 $m^3/m^2 \cdot d$

AEROBIC DIGESTERS:

Two, 15.2m x 9.6m x 5.3m
Volume: 1591.1 m^3

DIGESTER SETTLING TANKS:

Two, 2.74m x 9.75m x 2.77m
Volume: 113.65 m^3

BLOWERS:

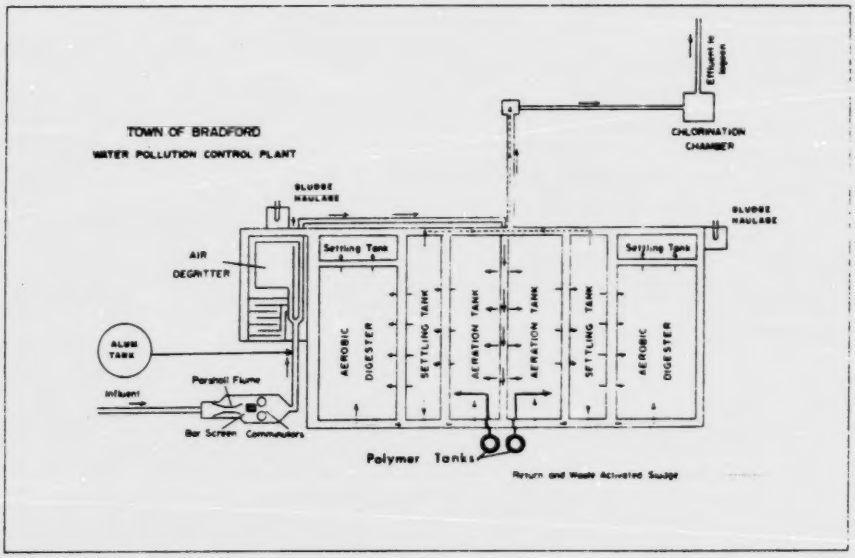
Three, Type: Roots Connersville
Size: 1191.0 l/s @ 58.605 kPa

CHLORINATION:

In effluent Manhole

LAGOON:

4.047 hectares



DESIGN DATA - IMPERIAL

Project:	Bradford (town) WPCP
Project No:	1-0035-66
Treatment:	High Rate Activated Sludge
Design Flow:	0.80 MGD
BOD:	Raw Sewage - 230 mg/l
SS:	Raw Sewage - 275 mg/l

PRETREATMENT

COMMINUTION CHAMBER:
Two channels 1.9'w x 6.5' x 1.5 (avg)
with comminutors

BAR SCREEN:
In channel between comminutors

AIR DEGRITTER:
9.75' x 13' x 9.6' (avg)
Volume: 7,600 l. gal.
Detention: 13 min.

BIOLOGICAL TREATMENT

AERATION TANKS:
Two, 17.5' x 62' x 12.75' swd
Volume: 173,000 l. Gal.
Detention: 4.8 hours

SETTLING TANKS:
Two, 14' x 62' x 12.75' (avg)
Volume: 106,000 l. Gal.
Detention: 3.0 hour
Overflow rate: 495 gpd/sq. ft.

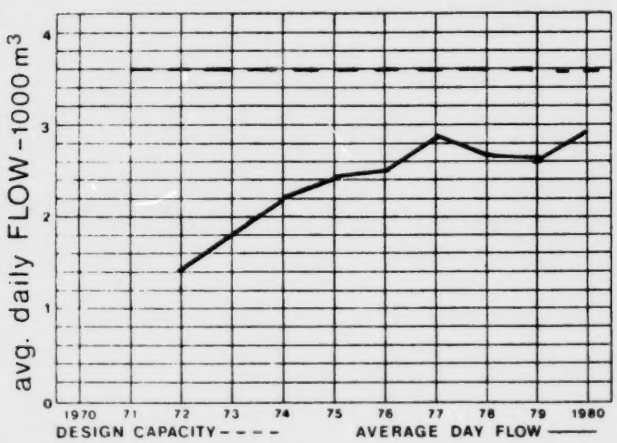
AEROBIC DIGESTERS:
Two, 50' x 32' x 17.5'
Volume: 350,000 l. Gal.

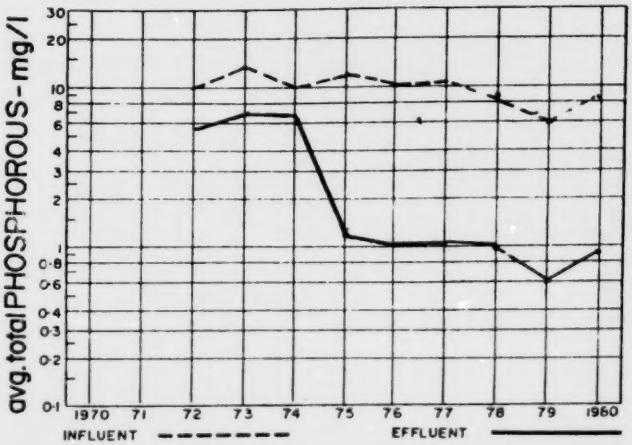
DIGESTER SETTLING TANKS:
Two, 9' x 32' x 9.1'
Volume: 25,000 l. Gal.

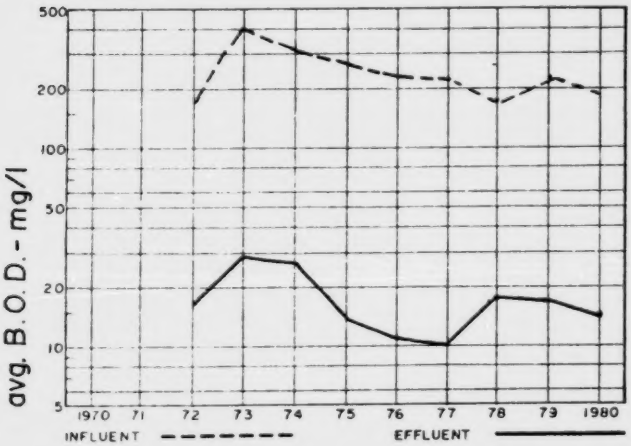
BLOWERS:
Three, Type: Roots Connersville
Size: 2850 cfm at 8.5 psi

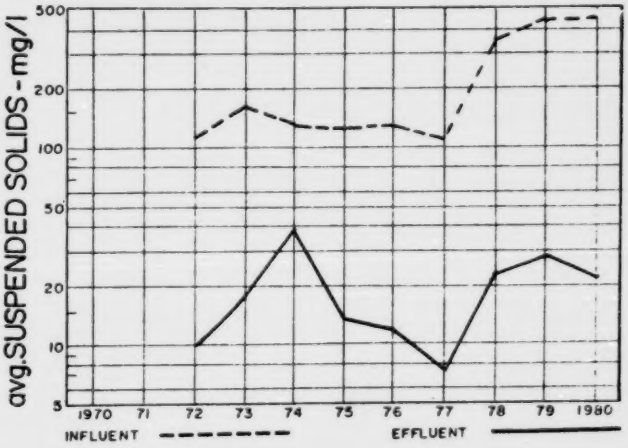
CHLORINATION:
in effluent manhole

LAGOON
10 acres









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000944 BRADFORD WPCP

MUNICIPALITY : BRADFORD
REGION : 03 CENTRAL

TREATMENT FACILITY : HIGH RATE
POLISHING LAGOON(S)
PHOSPHORUS REMOVAL

CURRENT POPULATION : 6,913
POPULATION SERVED : 6,815
PERCENT SERVED : 98.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.636 1000 M3 DESIGN BOD5 : 230.0 MG/L DESIGN SUSP.SOLIDS : 275.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	72.522	2.339	3.320	8.500	175.0	10.0	94	11.9	565.0	46.0	91	37.6	8.1	.3	95	.563
FEB	73.639	2.539	3.143	7.000	310.0	25.0	91	20.9	431.0	31.0	92	29.4	7.3	.9	87	.468
MAR	88.093	2.842	4.600	7.300	205.0	24.0	88	15.9	375.0	30.0	92	30.3	7.9	.8	89	.622
APR	91.998	3.067	5.548	6.200	150.0	27.0	82	11.3	311.0	19.0	93	26.8	6.1	.6	89	.502
MAY	87.363	2.818	3.690	6.300	175.0	11.0	93	14.3	405.0	16.0	96	33.9	8.8	.9	89	.690
JUN	76.948	2.565	3.920	6.300	263.0	16.0	93	19.0	547.0	11.0	97	41.2	13.0	1.4	89	.893
JUL	88.979	2.870	7.191	6.300	220.0	5.0	97	19.1	326.0	17.0	94	27.4	9.1	1.2	86	.703
AUG	84.245	2.712	3.956	6.400	230.0	14.0	93	18.1	350.0	13.0	96	28.3	8.2	1.3	84	.581
SEP	86.788	2.893	3.746	7.200	130.0	17.0	86	9.8	425.0	16.0	96	35.4	7.2	.9	86	.542
OCT	98.215	3.618	4.619	8.100	202.0	12.0	94	18.6	539.0	14.0	97	51.5	8.2	.9	89	.717
NOV	98.462	3.282	3.693	8.000	173.0	15.0	91	15.5	598.0	16.0	97	57.3	7.2	.6	91	.650
DEC	98.306	3.171	4.154	10.100	129.0	24.0	81	10.3	445.0	23.0	94	41.4	6.2	1.1	82	.501
TOTAL	1045.558							185.2				441.3				7.432
AVERAGE		2.893			196.8	16.6	91		443.0	21.0	95		8.1	.9	88	
MAXIMUM			7.191	10.100												
NO. OF SAMPLES					21	15			211	210			21	14		

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

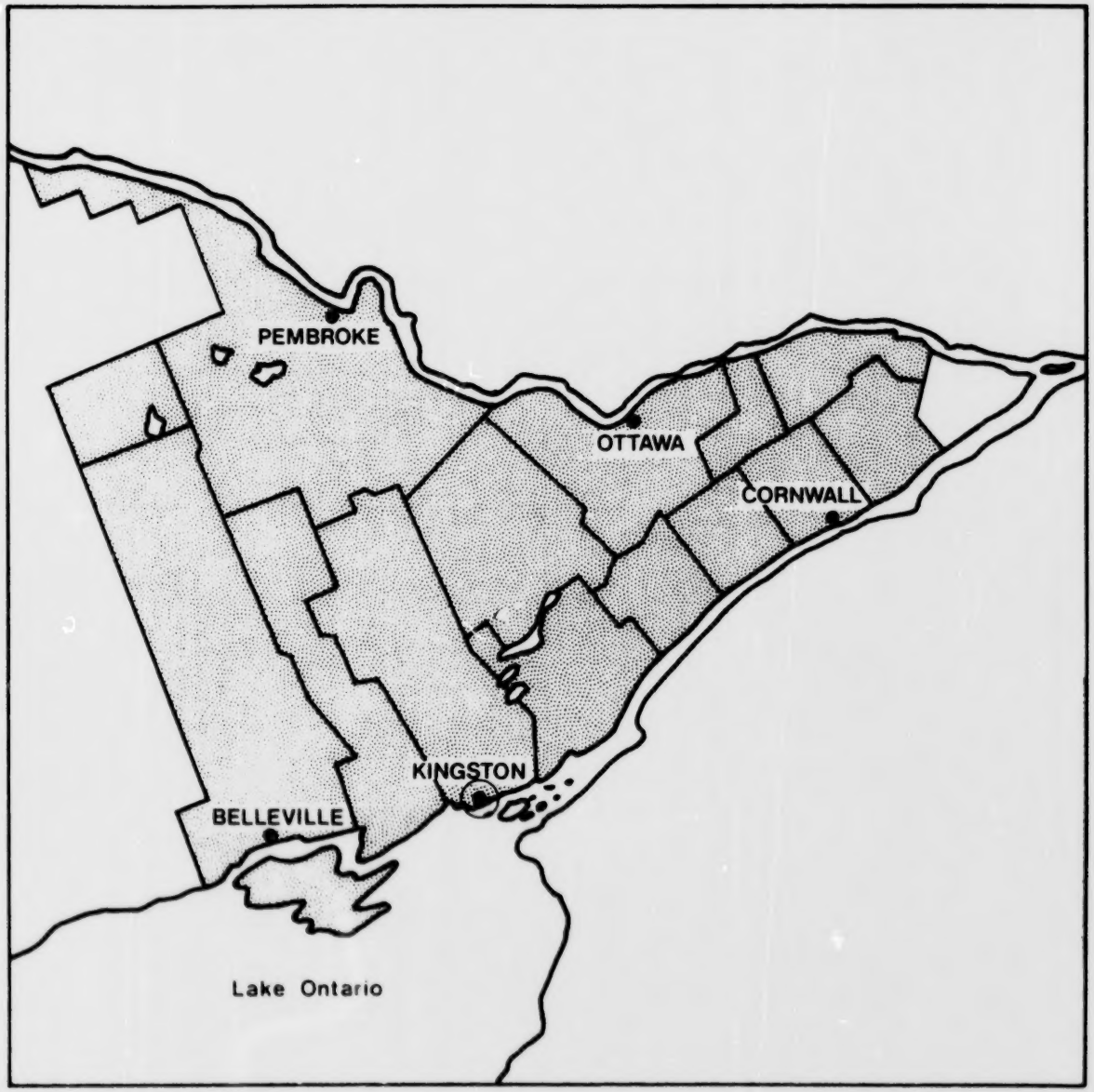
Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Ministry of the Environment
Ontario

Southeastern Region

④



DESIGN DATA - METRIC

CARLETON PLACE

PROJECT NO: 1-0009-66

TREATMENT: High Rate Activated Sludge

DESIGN FLOW: 5.5 x $10^3 m^3$/d

DESIGN BOD: 108 mg/l

DESIGN SS: 126 mg/l

SEWAGE LIFT PUMPS

Type: Chicago Pump
Cap. Three 79.5 l/s @ 7.0m TDH

PRETREATMENT

1. Coarse Bar Screen, 5.1 cm c-c
2. Barminutor, CP model 15C-12 and bypass screen 2.5 cm c-c
3. Grit Removal - C.P. Aer-Degritter -Size 3.6m x 4.0m x 2.1m avg (25.9m^3)

AERATION SECTION

- Tank Size: two 23.2m x 3.3m x 2.8m (409.1 m^3 gal. total)
- Detention: 1.8 hr @ 5.5 x 10^3 m^3/d
- Air Supply: Three SUTORBILT 518.2 l/s
- Diffusers: C.P. FLEXOFUSERS

SETTLING TANKS

Size: Six 7.6m x 4.9m hopper bottom tanks in two sets of three /total volume: 548.3m^3)
Detention: 2.5 hr @ 5.5 x $10^3 m^3$/d
Loading: 24.4 m^3/m^2.d

CHLORINATION

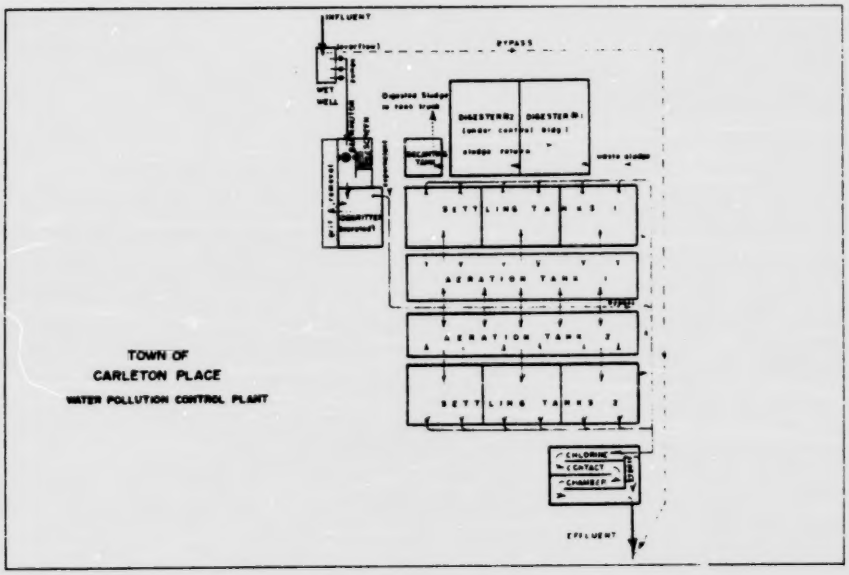
Tank Size: 7.9m x 6.1m x 1.8m (90.9 m^3)
Detention: 24 minutes @ 5.5 x $10^3 m^3$/d
Chlorinator: W&T V-800 90.7 kg/day flow prop.

AEROBIC DIGESTER

Size: Two 8.5m x 10.2m x 3.9m 727.4m^3 total)

DECANTING TANK

Size: 3.0m x 3.0m hopper bottom (19.5 m^3)



DESIGN DATA - IMPERIAL

PROJECT NO: 1-0009-66
TREATMENT: High Rate Activated Sludge
DESIGN FLOW: 1.2 MGD
DESIGN BOD: 108 mg/l
DESIGN SS: 126 mg/l

SEWAGE LIFT PUMPS

Type: Chicago Pump
Cap. Three 1050 IGPM @ 23' TDH

PRETREATMENT

1. Coarse Bar Screen, 2" c-c
2. Barminutor, CP model 15C-12 and bypass screen 1" c-c
3. Grit Removal - C.P. Aer-Degritter - Size 10' x 13' x 7' avg (5700 gal)

AERATION SECTION

- Tank Size: two 76' x 10'-9" x 9'-1" (90,000 gal. total)
- Detention: 1.8 hr @ 1.2 mgd
- Air Supply: Three SUTORBILT 1240 cfm
- Diffusers: C.P. FLEXOFUSERS

SETTLING TANKS

Size: Six 25' x 16' hopper bottom tanks in two sets of three /total volume: 135,000 gal)
Detention: 2.5 hr @ 1.2 mgd
Loading: 500 gpd sq. ft.

CHLORINATION

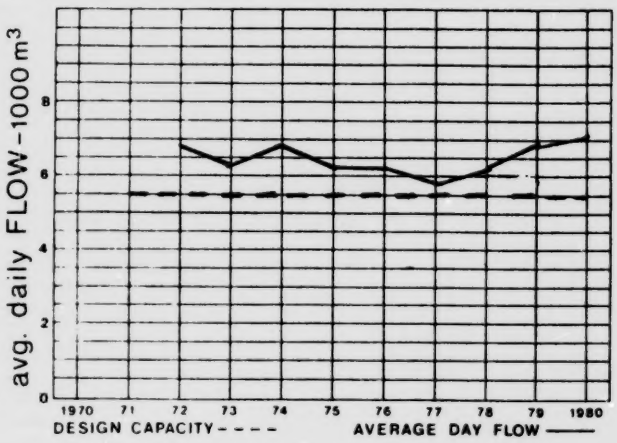
Tank Size: 26' x 20' x 6' (20,000 gal)
Detention: 24 minutes @ 1.2 mgd.
Chlorinator: W & T V-800 200 lb/day, flow prop

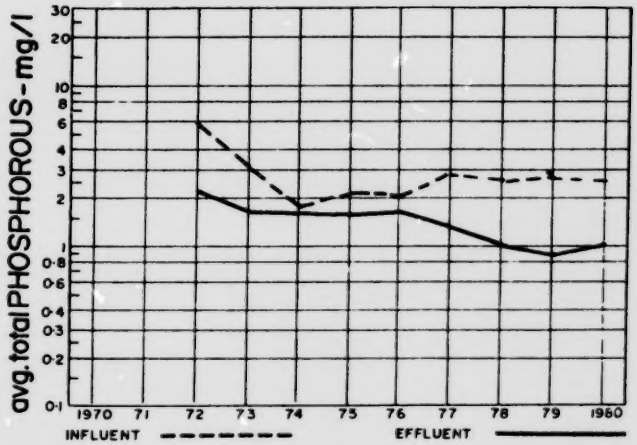
AEROBIC DIGESTER

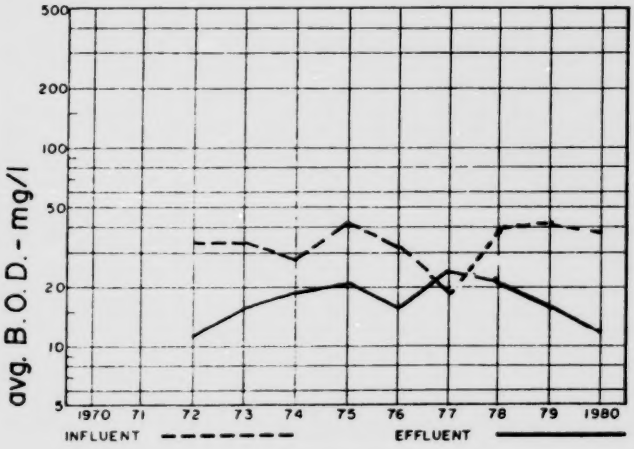
Size: Two 28' x 33'-6" x 12'-8" (160,000 gal total)

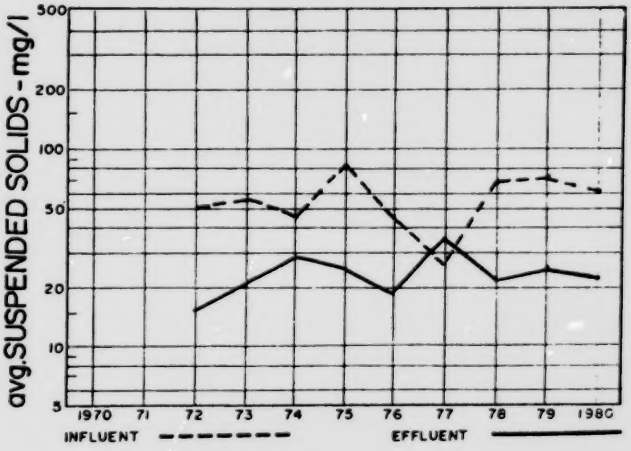
DECANTING TANK

Size: 10' x 10' hopper bottom (4300 gal)









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000971 CARLETON PLACE WPCP

MUNICIPALITY : CARLETON PLACE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : HIGH RATE
PHOSPHORUS REMOVAL

CURRENT POPULATION : 5,574
POPULATION SERVED : 5,560
PERCENT SERVED : 99.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.455 1000 M3 DESIGN BOD5 : 108.0 MG/L DESIGN SUSP.SOLIDS : 126.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	226.300	7.300	8.800	8.750	20.0	12.0	40	1.8	31.5	35.0	-	-	3.2	1.1	63	.457
FEB	214.900	7.400	9.400	10.800	60.0	19.0	68	8.8	45.0	32.0	28	2.7	3.0	1.0	66	.430
MAR	205.100	6.616	8.700	11.000	39.5	23.0	41	3.3	102.5	25.0	75	15.8	3.0	1.0	66	.410
APR	220.300	7.300	10.400	10.600	30.0	14.0	53	3.5	15.5	15.5			3.8	1.0	73	.621
MAY	205.900	6.600	8.300	10.200	25.0	16.0	36	1.8	71.5	33.0	53	7.9	2.7	1.5	43	.241
JUN	215.600	7.180	7.700	10.600	58.0	5.0	91	11.4	110.0	21.0	80	19.1	2.3	1.1	52	.265
JUL	197.257	6.363	7.400	12.100	35.0	3.5	90	6.2	39.0	12.0	69	5.3	1.8	.8	56	.207
AUG	209.472	6.750	6.900	11.400	30.5	8.0	73	4.7	30.5	7.0	77	4.9	2.3	.4	82	.398
SEP	196.032	6.513	7.400	11.000	35.0	5.5	84	5.7	60.0	9.5	84	9.9	2.1	.9	57	.235
OCT	205.900	6.640	9.600	12.200	45.0	14.8	67	6.2	72.5	35.1	51	7.6	2.8	1.5	44	.255
NOV	222.333	7.411	9.100	11.400	40.0	8.0	80	7.1	43.5	26.5	39	3.7	2.0	1.3	36	.167
DEC	283.900	9.160	11.400	11.400	46.5	19.0	59	7.8	100.0	33.0	67	19.0	2.0	1.2	41	.241
TOTAL	2602.994							68.6				96.4				3.927
AVERAGE		7.103			38.7	12.3	68		60.1	23.7	60		2.6	1.0	58	
MAXIMUM			11.400	12.200												
NO. OF SAMPLES					22	26			22	26			149	128		

OXIDATION DITCH

Ministry of the Environment
Ontario

Southwestern Region
①

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Ministry of the Environment
Ontario

Southwestern Region

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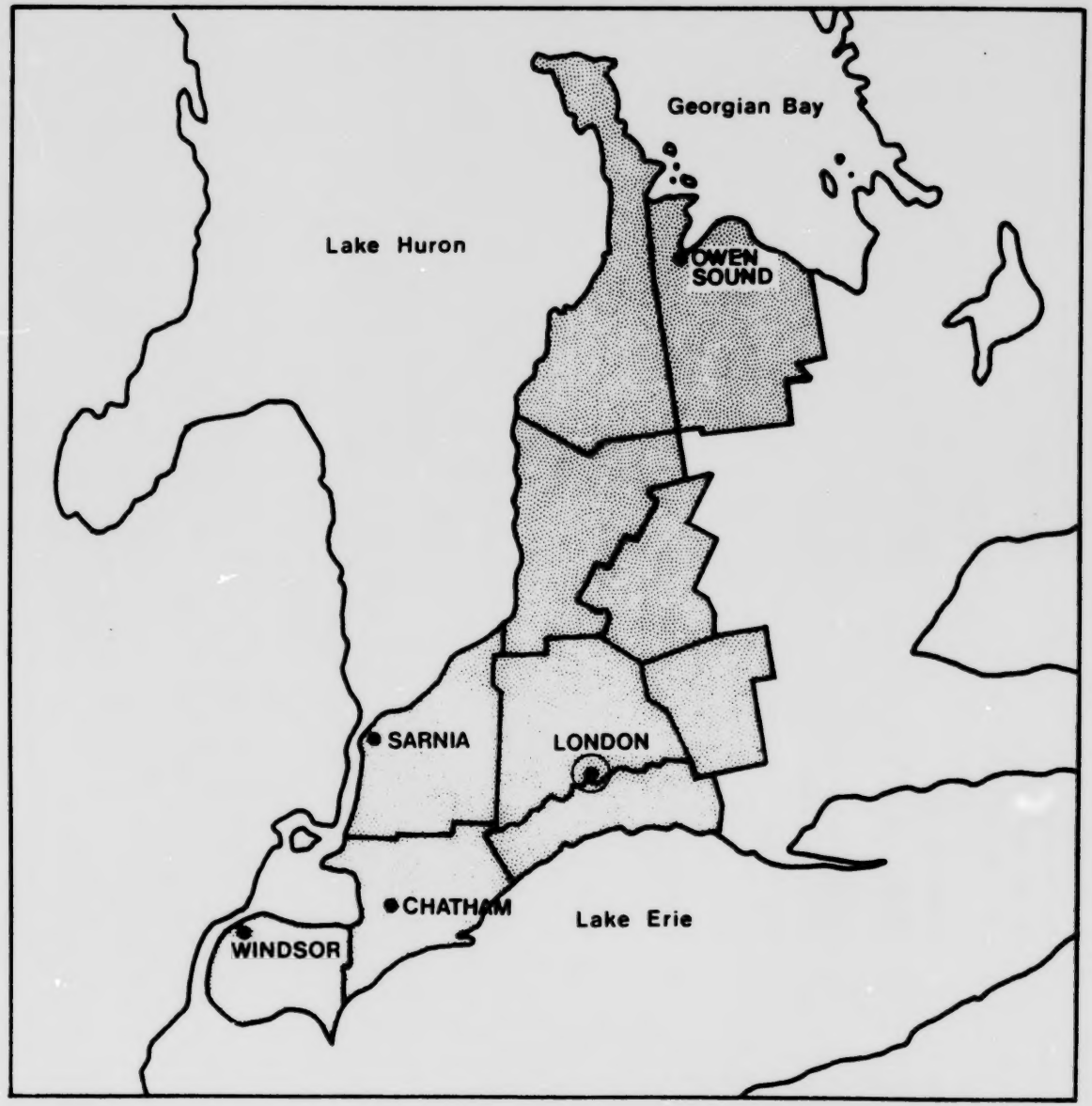


DESIGN DATA - METRIC

PAISLEY

PROJECT: Village of Paisley WPCP

PROJECT NO. 1-0101-67

TREATMENT: Extended Aeration

NOMINAL FLOW: 0.705 $10^3 m^3/d$

BOD - Raw Sewage 119.8 kg/d

RAW SEWAGE P.S.
Capacity: 0.044 $10^3 m^3/d$

COMMINUTOR
Type: Condux SCHQU150-A
Size: 57 R/m

GRIT CHANNELS
Size: Two, each 6.1m x 0.6m x 0.85m swd
Volume (each): 3.18 m^3
Retention: (each) 6.5 min.

OXIDATION DITCH
Volume: 555.52 m^3
Retention: 18.9 hr.

ROTORS
Type: Pumps and Softeners Ltd.
Size: Two, each 2.43m length x 0.70m dia.

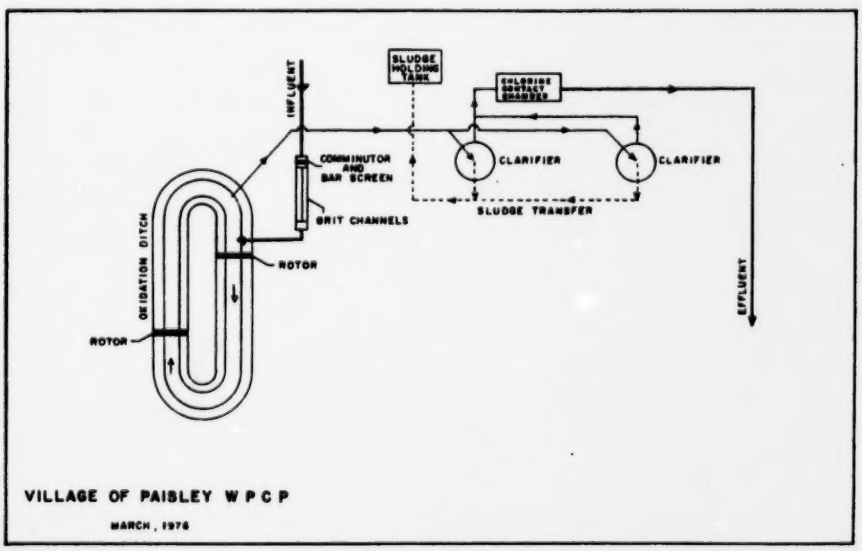
SECONDARY CLARIFIERS
Type: Two, circular
Size: each 7.3m dia x 3.0m swd
Volume (total): 256.85m^3
Retention (total): 6.7 hr.
Loading:
- Surface: 16.62 $m^3/m^2 \cdot d$
- Weir: 15.39 $m3/m \cdot d$

SLUDGE PUMPS
Type: Two, each 10.29 l/s at 4.6m TDH

CHLORINATION CHAMBER
Volume: 12.93 m^3
Retention: 26 min.

CHLORINATOR
Type: F and P
Capacity: 18.1 kg/d

SLUDGE HOLDING TANK
Size: 5.2m x 3.0m x 3.7m swd
Volume: 50.0m^3



DESIGN DATA - IMPERIAL

PROJECT: Village of Paisley WPCP

PROJECT NO. 1-0101-67

TREATMENT: Oxidation Ditch

NOMINAL FLOW: 0.155 MIGD

BOD - Raw Sewage 264 lb/day

RAW SEWAGE P.S.
Capacity: 0.7 USMGD

COMMINUTOR
Type: Condux SCHQU150-A
Size: 57 rpm

GRIT CHANNELS
Size: Two, each 20'x2'x2.8'swd
Volume (each): 700 I.G.
Retention: (each) 6.5 min.

OXIDATION DITCH
Volume: 122,200 I.G.
Retention: 18.9 hr.

ROTORS
Type: Pumps and Softeners Ltd.
Size: Two, each 8' length x 2.3' dia.

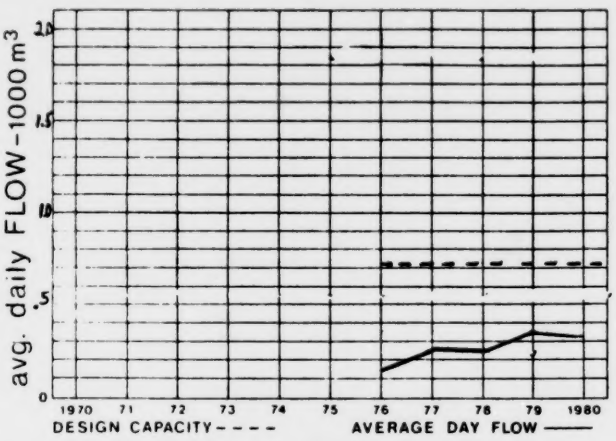
SECONDARY CLARIFIERS
Type: Two, circular
Size: each 24' dia x 10' swd
Volume (total): 56,500 I.G.
Retention (total): 6.7 hr
Loading:
- Surface: 340 IG/ft^2/day
- Weir: 1033 IG/ft/day

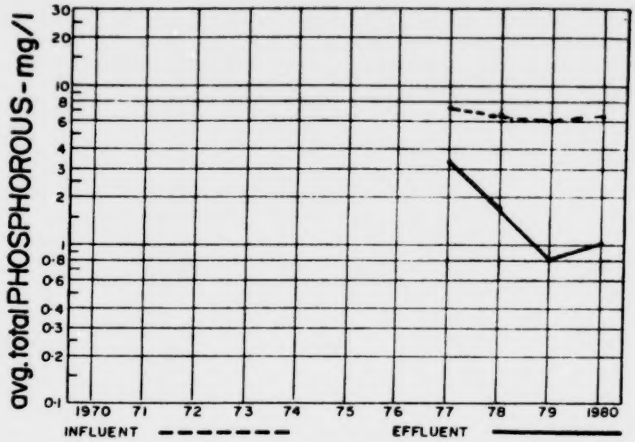
SLUDGE PUMPS
Type: Two, each 163 USGPM @ 15'TDH

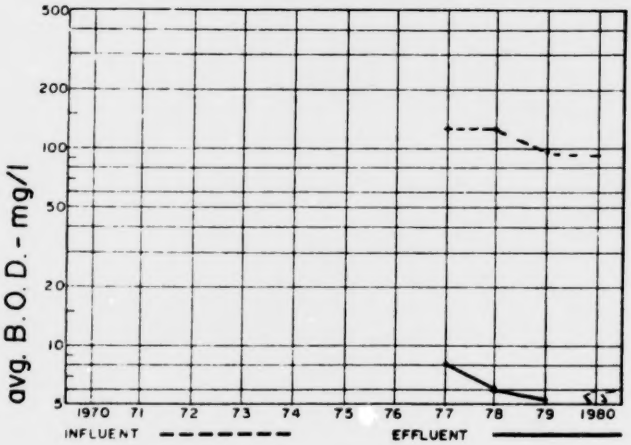
CHLORINATION CHAMBER
Volume: 2845 I.G.
Retention: 26 min.

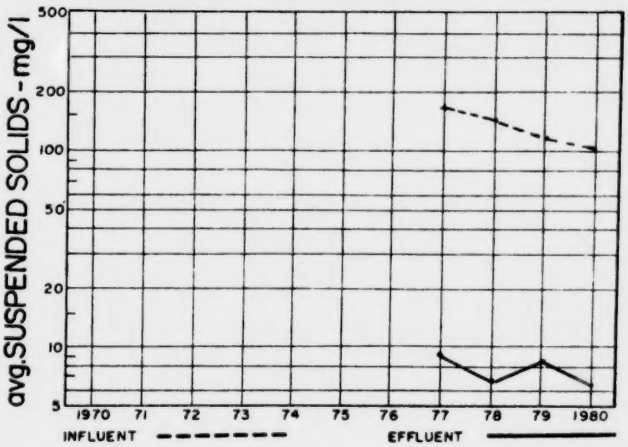
CHLORINATOR
Type: F and P
Capacity: 40 lb/day

SLUDGE HOLDING TANK
Size: 17'x10'x12' swd
Volume: 11,000 I.G.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001907 PAISLEY MPCP

MUNICIPALITY : PAISLEY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : OXIDATION DITCH

CURRENT POPULATION : 703
POPULATION SERVED : 637
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.704 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	9.897	.319	.449		125.0	7.6	93	1.1	165.0	12.5	92	1.5	8.6	.8	90	.077
FEB	8.451	.291	.324		116.0	8.0	93	.9	137.5	8.8	93	1.0	6.7	1.1	83	.047
MAR	13.741	.443	.970		96.0	8.2	91	1.2	85.5	5.0	94	1.1	5.4	.7	87	.065
APR	12.356	.412	.644		132.5	4.5	96	1.5	116.0	6.3	94	1.3	6.5	.5	92	.074
MAY	9.297	.300	.366		99.0	3.4	96	.8	115.0	7.5	93	.9	7.9	.8	89	.066
JUN	7.657	.255	.350		80.0	2.1	97	.5	75.0	2.3	96	.5	6.1	1.0	83	.039
JUL	9.184	.296	.416		45.0	1.2	97	.4	74.0	4.4	94	.6	4.1	1.4	65	.025
AUG	8.942	.288	.371		56.0	.8	98	.4	102.1	2.7	97	.8	5.6	1.3	76	.038
SEP	9.560	.319	.435		102.0	4.2	95	.9	131.0	9.0	93	1.1	6.1	1.4	77	.045
OCT	9.973	.330	.423		84.0	4.4	94	.7	98.3	5.7	94	.9	6.8	1.0	85	.058
NOV	9.026	.300	.345		90.0	4.6	94	.7	72.8	7.7	89	.5	5.3	1.3	75	.036
DEC	10.663	.334	.690		70.0	1.8	97	.7	93.9	3.4	96	.9	5.2	1.0	80	.045
TOTAL	118.747							10.4				11.7				.615
AVERAGE		.324			91.2	4.2	95		105.5	6.2	94		6.1	1.0	83	
MAXIMUM			.970													
NO. OF SAMPLES					23	23			23	23			23	23		

SOUTHAMPTON

DESIGN DATA - METRIC

PROJECT: Town of Southampton WPCP
PROJECT NO.: 1-0027-66
TREATMENT: Oxidation Ditch
DESIGN CAPACITIES: Winter - 1.318 $10^3 m^3/d$
Summer - 3.05 $10^3 m^3/d$

DESIGN POPULATION: Summer - 6700
Winter - 2900

BOD - RAW SEWAGE: Winter - 223.6 kg/d
Summer - 430.9 kg/d

PUMPING STATIONS

P.S. NO. 1
PUMPS
Type: variable-speed
Size: two each 115.2 l/s @ 32.9m TDH

SCREENING
Type: Bar screen (manually cleaned)
Gravity overflow

P.S. NO. 2
PUMPS
Type: FLYGT Submersible
Size: Two, each 47.3 l/s @ 11.2m TDH

P.S. NO. 3
PUMPS
Type: FLYGT Submersible
Size: Two, each 15.8 l/s @ 22.3m TDH

PRETREATMENT

SCREENING
Bar Screen (manually cleaned)

COMMINUTION
Size: 40.6 cm dia.
Motor 2.24 kW

BIOLOGICAL TREATMENT

OXIDATION DITCHES
Two, Volume (each) 1318.34m^3
Retentions: Winter (1 ditch): 24 hr.
Summer (2 ditches): 20.8 hr

AERATORS (1 per ditch)
Size: two, each 0.7m dia. x 6.1m l
Motors: 1.86 kW

FINAL SEDIMENTATION TANKS

Size: Two, each 4.3m x 14.6m x 3.7m awl
Volume (total): 454.6 m^3
Retentions: Winter (1 tank): 4.2 hr.
Summer (2 tanks): 3.6 hr.
Loadings: surface-winter (1 tank):
21.02 $m^3/m^2 \cdot d$
Summer - (2 tanks)
24.4 $m^3/m^2 \cdot d$
Weir: Winter (1 tank)
59.6 $m^3/m \cdot d$
Summer (2 tanks)
68.8 $m^3/m \cdot d$

RETURN ACTIVATED SLUDGE PUMPS
Type: Centrifugal
Size: Two, each 34.7 l/s @ 7.6m TDH

CHLORINATION

CHLORINE CONTACT CHAMBER

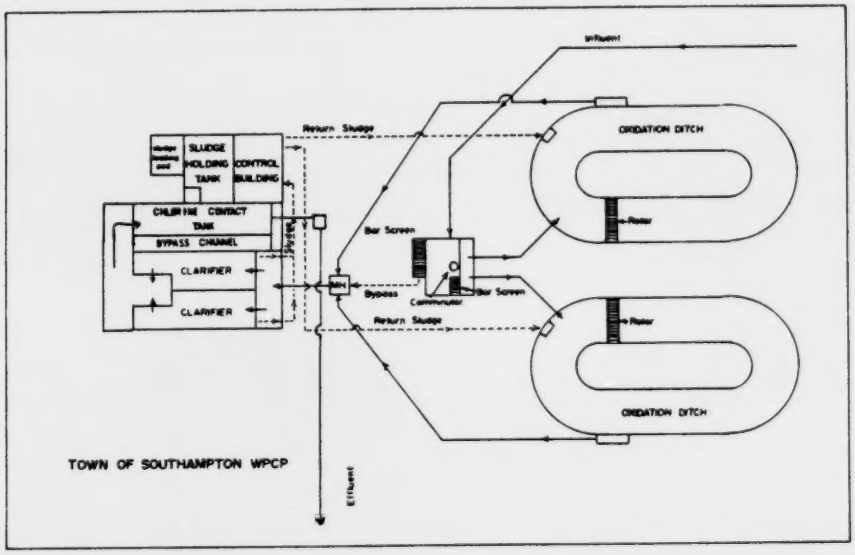
Size: One, 1.8m x 14.6m x 2.7m awl
Volume: 73.65m^3
Retentions: Winter(@ 1.32 $10^3 m^3/d$) 80 mi.
Summer(@ 3.05 $10^3 m^3/d$) 35 mi.

SLUDGE HANDLING

SLUDGE HOLDING TANK
Size: One, 6.4m x 9.1m x 3.4m awl
Volume: 189.7m^3
Loading: winter - .065m^3/cap
summer - .028m^3/cap

SLUDGE PUMP
Type: Duplex plunger
Size: One, 12.62 l/s @ 12.2m TDH

SLUDGE AERATION
Size: One, 112.8 l/s @ 48.2 kPa
Motor: 7.5kW 1150 rpm



DESIGN DATA - IMPERIAL

PROJECT: Town of Southampton WPCP
PROJECT NO: 1-0027-66
TREATMENT: Oxidation Ditch
DESIGN CAPACITIES: Winter - 0.29 MIGD
Summer - 0.67 MIGD

DESIGN POPULATION: Summer- 6700
Winter- 2900

BOD - RAW SEWAGE: Winter-493 lb/day
Summer-950 lb/day

PUMPING STATIONS

P.S. NO. 1
PUMPS
Type: variable-speed
Size: two each 1825 USGPM @ 108' TDH

SCREENING
Type: Bar screen (manually cleaned)
Gravity overflow

P.S. NO. 2
PUMPS
Type: FLYGT Submersible
Size: Two, each 750 USGPM @ 37' TDH

P.S. NO. 3
PUMPS
Type: FLYGT Submersible
Size: Two, each 250 USGPM @ 73' TDH

PRETREATMENT

SCREENING
Bar Screen (manually cleaned)

COMMINUTION
Size: 16" dia
Motor: 3 HP

BIOLOGICAL TREATMENT

OXIDATION DITCHES
Two, Volume (each) 290,000 I.G.
Retentions: Winter (1 ditch): 24 hr
Summer (2 ditches): 20.8 hr

AERATORS (1 per ditch)
Size: two, each 27.5" dia x 20' l
@ 25 HP

FINAL SEDIMENTATION TANKS
Size: Two, each 14' x 48' x 12' awl
Volume(total): 100,000 I.G.
Retentions: Winter (1 tank): 4.2 hr
Summer (2 tanks): 3.6 hr
Loadings: surface-Winter (1 tank):
430 IGPD/ft^2
Summer-(2 tanks) 500 IGPD/ft^2

Weir:-Winter (1 tank)
4,000 IGPD/lin ft
Summer (2 tanks)
4620 IGPD/lin ft

RETURN ACTIVATED SLUDGE PUMPS
Type: Centrifugal
Size: Two, each 550 USGPM @ 25' TDH

CHLORINATION

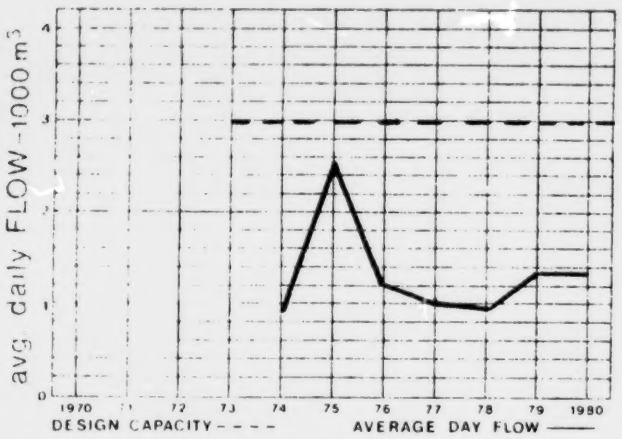
CHLORINE CONTACT CHAMBER
Size: One, 6' x 48' x 9' awl
Volume: 16,200 I.G.
Retentions: Winter(@ 0.29 MIGD) 80 min
Summer(@ 0.67 MIGD) 35 min

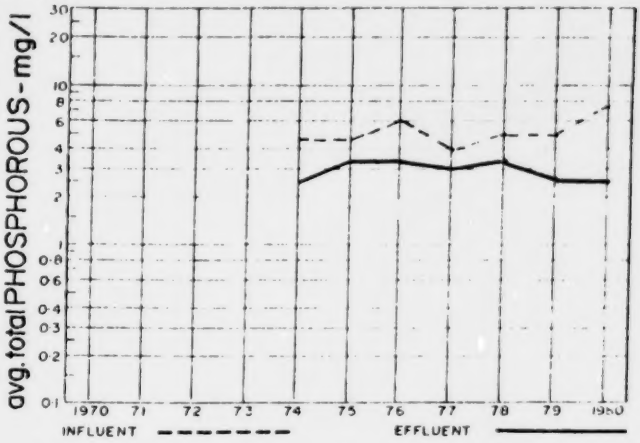
SLUDGE HANDLING

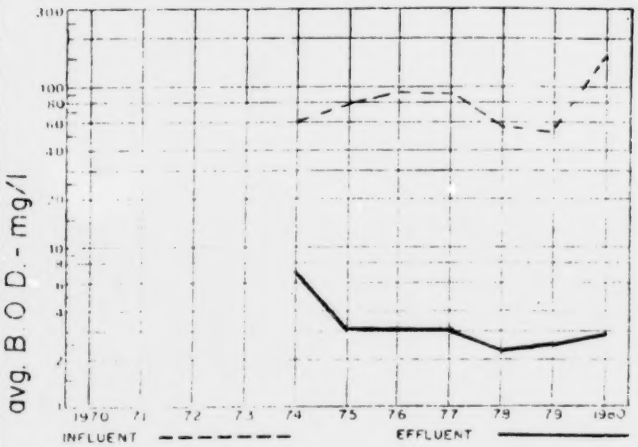
SLUDGE HOLDING TANK
Size: One, 21' x 30' x 11' awl
Volume: 6,700 ft^3
Loading: winter-2.31 ft^3/ cap.
summer-1.00 ft^3/cap.

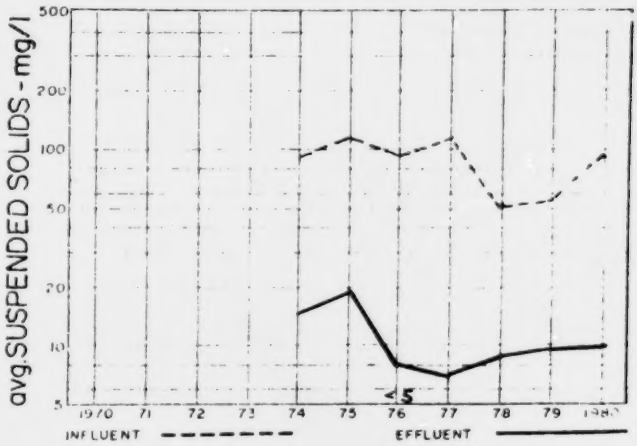
SLUDGE PUMP
Type: Duplex plunger
Size: One, 200 USGPM @ 40' TDH

SLUDGE AERATION
Size: One, 270 cfm @ 7.0 PSIG
Motor: 10 HP, 1150 rpm









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001453 SOUTHAMPTON MPCP

MUNICIPALITY : SOUTHAMPTON
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : OXIDATION DITCH

CURRENT POPULATION : 2,748
POPULATION SERVED : 1,805
PERCENT SERVED : 65.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.045 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	44.360	1.431	1.739	3.400	74.0	2.7	96	3.1	47.7	9.1	80	1.7	3.2	1.9	40	.058
FEB	36.583	1.261	1.376	2.800	59.0	4.5	92	1.9	39.5	12.0	69	1.0	2.8	2.6	7	.007
MAR	48.663	1.570	2.930	4.500	65.0	4.5	93	2.9	49.0	11.0	77	1.8	2.9	2.4	18	.027
APR	55.352	1.845	2.396	3.600	174.5	3.0	98	9.4	75.0	10.6	85	3.5	7.2	1.7	76	.305
MAY	41.203	1.329	1.454	3.700	80.0	1.9	97	3.2	57.0	10.6	81	1.9	8 3	2.3	71	.246
JUN	34.286	1.142	1.657	3.200	57.0	1.9	96	1.8	54.0	12.7	76	1.4	3.8	3.5	9	.012
JUL	52.550	1.695	2.457	6.000	112.0	3.1	97	5.7	195.5	7.7	96	9.8	8.1	3.7	54	.231
AUG	42.948	1.385	1.903	3.900	95.0	1.7	98	4.0	108.0	7.6	92	4.3	3.9	3.4	12	.021
SEP	29.944	.998	1.407	3.100	28.0	2.4	91	.7	31.0	8.5	72	.6	1.7	3.7	-	-
OCT	29.940	.966	1.543	3.600	515.5	2.7	99	15.3	97.0	11.0	88	2.5	22.8	2.7	88	.602
NOV	30.953	1.032	1.232	4.600	446.0	2.9	99	13.7	309.0	8.4	97	9.3	14.6	2.5	82	.374
DEC	42.367	1.366	1.964	3.400	181.5	3.5	98	7.5	43.0	7.8	81	1.4	10.3	2.3	77	.339
TOTAL	489.149							69.8				39.6				2.222
AVERAGE		1.335			157.2	2.9	98		92.1	9.7	89		7.4	2.7	63	
MAXIMUM			2.930	6.000												
NO. OF SAMPLES					24	24			72	77			24	24		

Ministry of the Environment
Ontario

West Central Region

②

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Ministry of the Environment
Ontario

West Central Region

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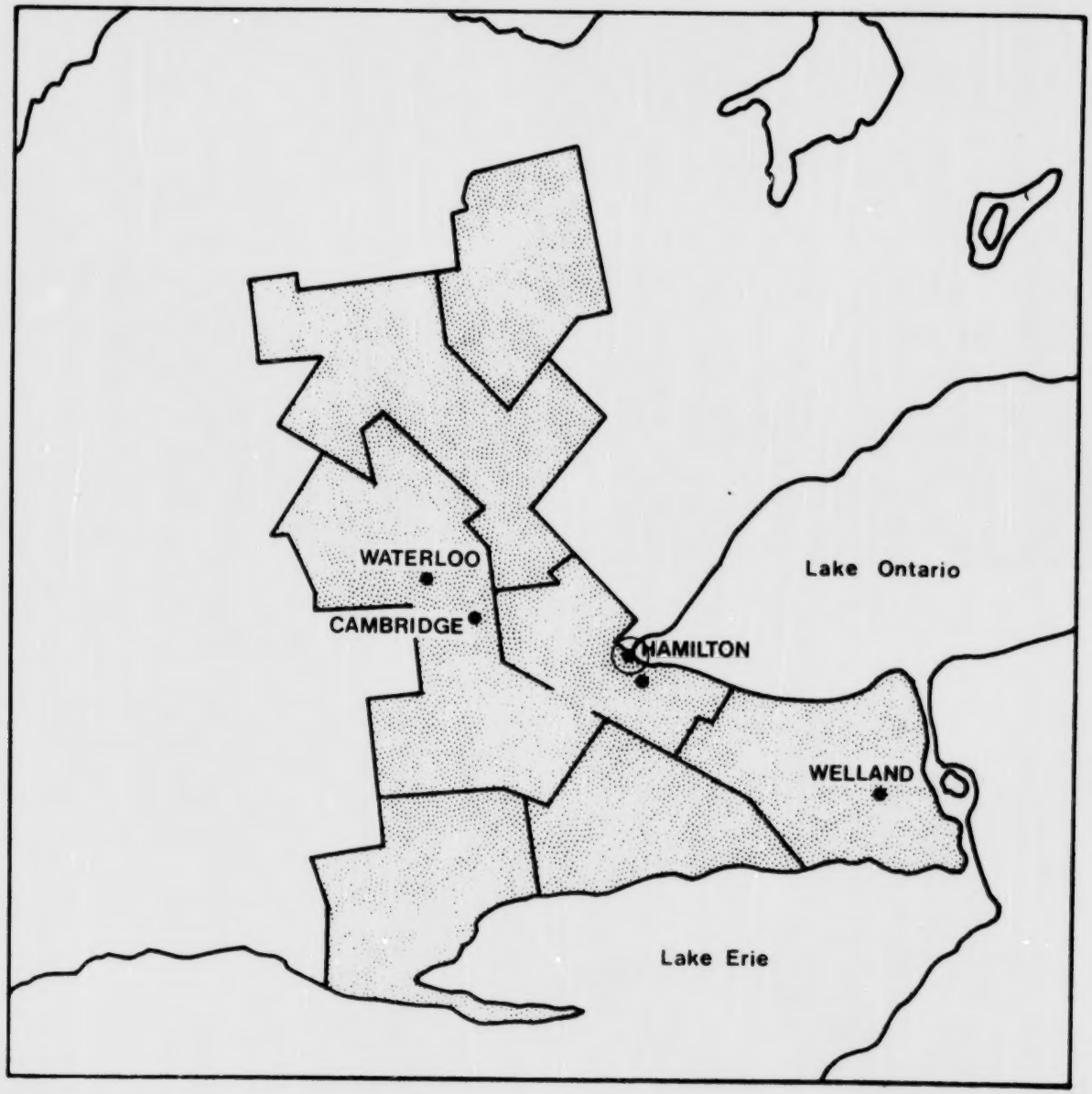


DESIGN DATA - METRIC

GRAND VALLEY

PROJECT: Village of Grand Valley WPCP

PROJECT NO.: 1-0018-66

TREATMENT: Oxidation Ditch

DESIGN FLOW: 0.600 $10^3m^3/d$

BOD - 200 mg/l

SS - 200 mg/l

RAW SEWAGE PUMPING
2, FLYGT CP100 Size: 28.0 l/s @ 8.2m TDH

GRIT CHANNELS
2, each 13.1m x .6m w x .6m swd
Volume (each) 4.9m^3 Detention: 12 min.
Bar screens in GRIT chamber

OXIDATION DITCH
Length 48.5m Design water level 1.4m
Volume: 590.98m^3 Detention: 24 hours
Rotor Type: Pumps and Softeners
Size: 8.4m dia. x 3.05m length
Motor: 5.6 kW 1750 rpm

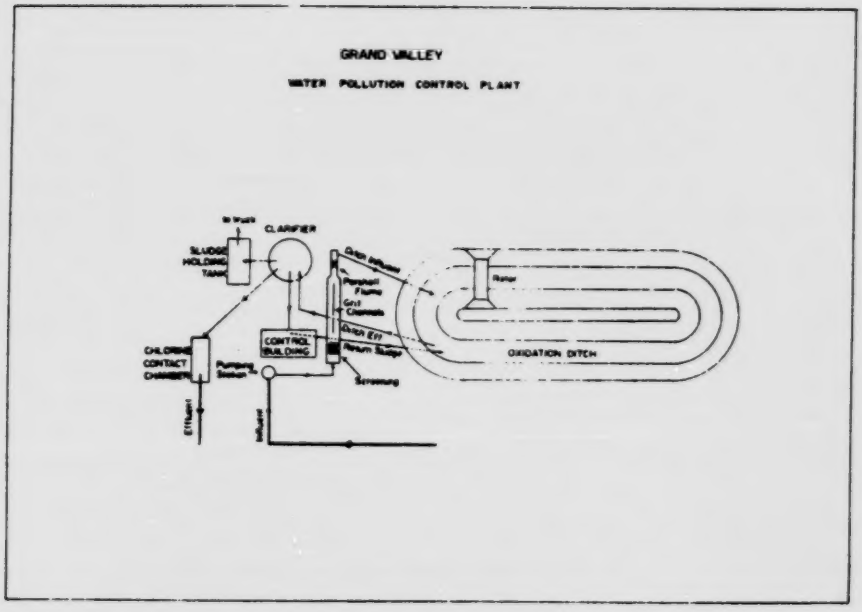
CLARIFIER
5.5m dia. x 3.1 m swd
Volume: 74.01m^3 Detention: 3.0 hours
Collector mechanism type DORR-OLIVER-LONG

SLUDGE PUMPS
2 Type: CRANE DEMING
Size - 9.5 l/s @ 3.4 m TDH

SLUDGE HOLDING TANK
3.7m x 2.4m x 2.9m swd
Volume: 23.83m^3 Detention: 58 min.

CHLORINE CONTACT CHAMBER
5.8m x 1.8m x 1.5m
Volume: (total) 12.233m^3 Detention: 30 min.

CHLORINATOR
BTF Hypochlorinator
Capacity .694 l/s @ 862 kPa



DESIGN DATA - IMPERIAL

PROJECT: Village of Grand Valley WPCP

PROJECT NO. 1-0018-66

TREATMENT: Oxidation Ditch

DESIGN FLOW: 0.132MGD

BOD - 200 mg/l

SS - 200 mg/l

RAW SEWAGE PUMPING:
2, FLYGT CP100 Size: 370 IGPM at 27' TDH

GRIT CHANNELS:
2, each 43' x 2'w x 2' swd
Volume (each) 1073 I.G. Detention: 12 min.
Bar screens in GRIT chamber

OXIDATION DITCH:
Length 159' Design water level 4.5'
Volume: 130,000 I.G. Detention: 24 hours
Rotor Type: Pumps and Softeners
Size: 27.5' dia. x 10' length
Motor: 7½ HP 1750 rpm

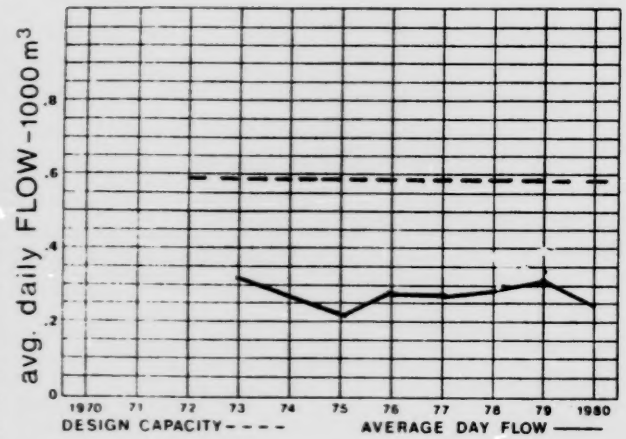
CLARIFIER:
18' dia. x 10.25' swd
Volume: 16,240 I.G. Detention: 3.0 hours
Collector mechanism type 'DORR-OLIVER-LONG'

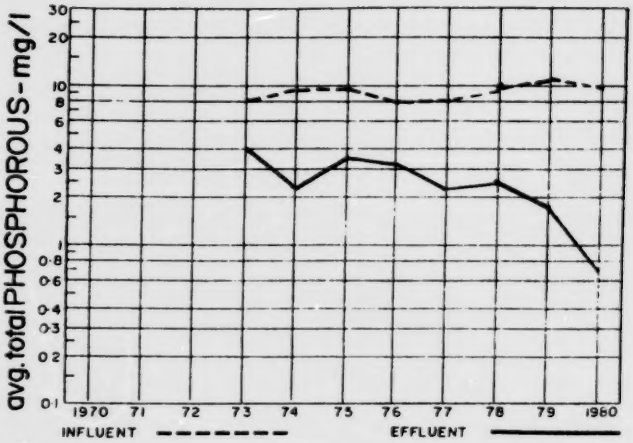
SLUDGE PUMPS:
2 Type: CRANE DEMING
Size: 150 USGPM at 11' TDH

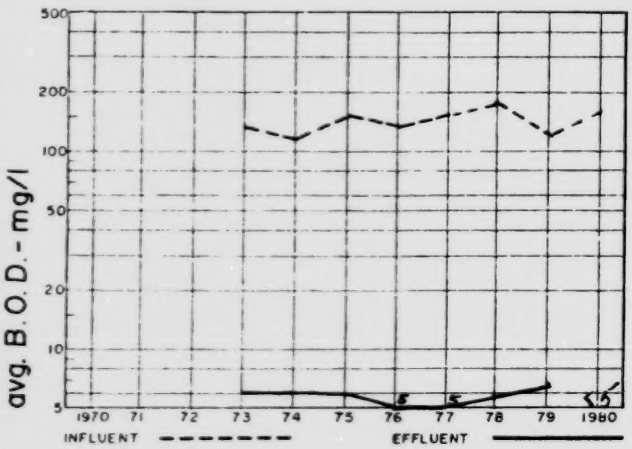
SLUDGE HOLDING TANK:
12' x 8' x 9.5' swd
Volume: 5242 IG Detention: 58 min.

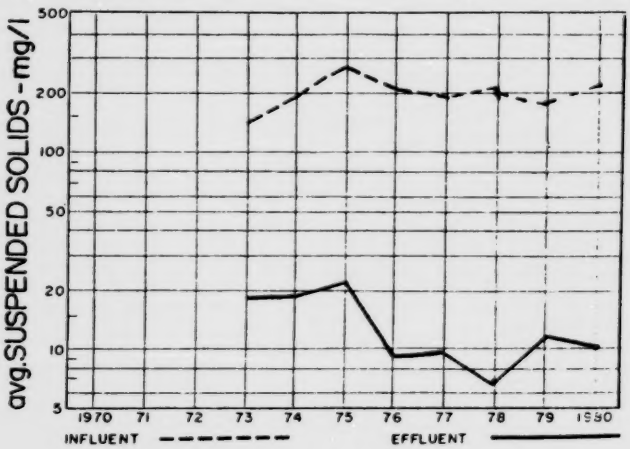
CHLORINE CONTACT CHAMBER:
19' x 6' x 5' swd (5-passes)
Volume: (total) 2691 I.G. Detention: 30 min.

CHLORINATOR:
BTF Hypochlorinator
Capacity 11 USGPD at 125 psi









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000301 GRAND VALLEY WPCP

MUNICIPALITY : GRAND VALLEY
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,160
POPULATION SERVED : 1,200
PERCENT SERVED : 103.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.600 1000 M3 DESIGN BOD5 : - MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA			—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	8.280	.270	.580		103.0	7.5	92	.7	160.0	14.2	91	1.2	8.8	1.4	84	.061
FEB	5.690	.200	.220		155.0	8.6	94	.8	225.0	17.4	92	1.1	10.2	1.3	86	.050
MAR	10.300	.330	1.370		135.0	6.3	95	1.3	219.0	15.0	93	2.1	9.4	.9	89	.087
APR	12.650	.420	.760		90.0	3.4	96	1.0	137.0	6.0	95	1.6	5.5	1.1	80	.056
MAY	6.930	.220	.310		149.0	3.1	97	1.0	192.0	11.0	94	1.2	8.6	1.0	87	.052
JUN	5.570	.190	.230		169.0	2.7	98	.9	248.0	8.8	96	1.3	11.0	1.0	90	.056
JUL	7.000	.230	.430		143.0	2.0	98	.9	201.0	9.0	95	1.3	8.4	.6	92	.054
AUG	6.070	.200	.240		130.0	.5	99	.7	235.0	4.7	98	1.3	9.9	.3	96	.058
SEP	6.740	.220	.330		250.0	1.7	99	1.6	291.0	6.5	97	1.9	12.5	.2	97	.082
OCT	7.530	.240	.310		195.0	1.2	99	1.4	237.0	4.9	97	1.7	14.0	.2	98	.104
NOV	6.850	.230	.280		200.0	4.0	98	1.3	227.0	6.0	97	1.5	10.5	.2	98	.071
DEC	8.520	.270	.600		95.0	5.0	94	.7	144.0	17.0	88	1.0	8.3	.4	94	.067
TOTAL	92.130							12.9				17.7				.798
AVERAGE		.252			151.1	3.8	97		209.6	10.0	95		9.7	.7	92	
MAXIMUM			1.370													
NO. OF SAMPLES					39	39			87	83			39	202		

DESIGN DATA - METRIC

HALDIMAND (CAYUGA)

PROJECT: Haldimand-Norfolk (Cayuga) WPCP

PROJECT NO.: 1-0043-66

DESIGN FLOW

0.909 $10^3 m^3/d$

GRIT REMOVAL

Type: Manually cleaned channels
Size: Two 5.6m x 1.46m x 0.8m deep

AERATION TANK

Type: Oxidation ditch with one Pumps & Softeners Ltd. rotor
Size: 662.688 m^3
Detention: 65 hr.
Flow Velocity: 0.305 m/s

FINAL CLARIFIER

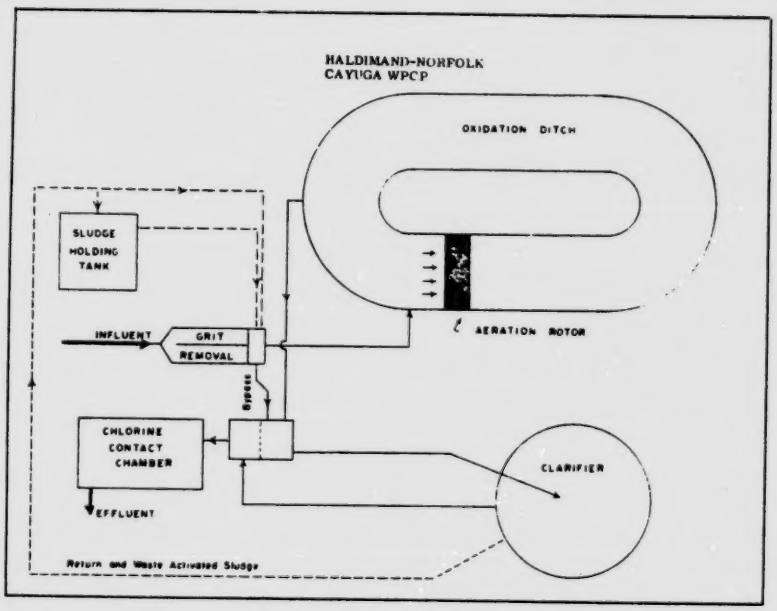
Type: Dorr-Oliver
Size: One 7.3m dia. x 3.7 m swd
153.655m^3 overflow rate
at design capacity 21.51 $m^3/m^2 \cdot d$

CHLORINATION

Type: Gas
Size: 22.68 kg/day

CONTACT TANK

Size: 21.594 m^3
Detention: 34 min.



DESIGN DATA - IMPERIAL

Project: Haldimand-Norfolk (Cayuga) WPCP

Project No: 1-0043-66

DESIGN FLOW

200, 000 gpd

GRIT REMOVAL

Type: Manually cleaned channels
Size: Two 18'6" x 1'6" x 2'6" deep

AERATION TANK

Type: Oxidation ditch with one Pumps & Softeners Ltd. rotor
Size: 23, 400 cu. ft. or 146, 000 gal.
Detention: 65 hr
Flow Velocity: 1 fps (min)

FINAL CLARIFIER

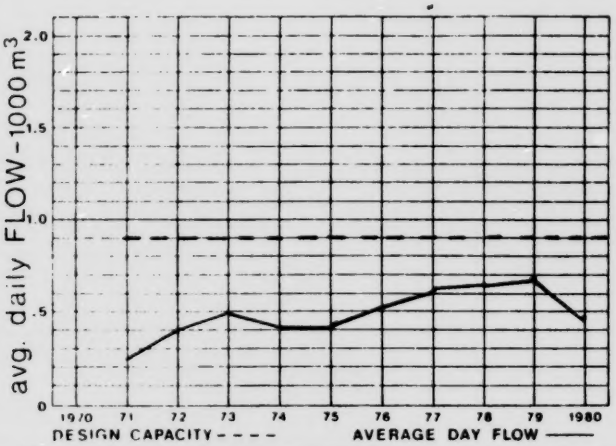
Type: Dorr-Oliver
Size: One 24' dia x 12' swd
(33, 800 gal) overflow rate
at design capacity 440 gal/ ft^2/day

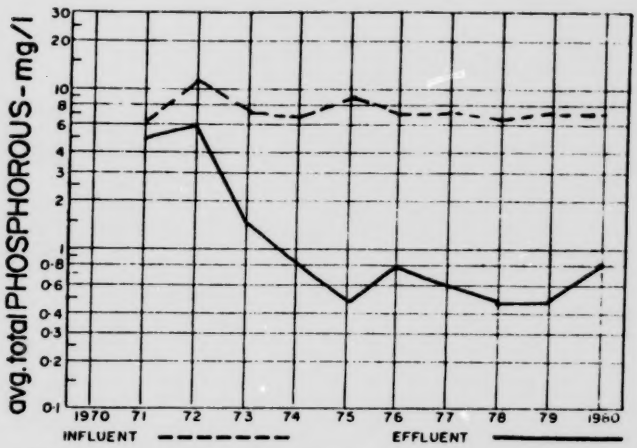
CHLORINATION

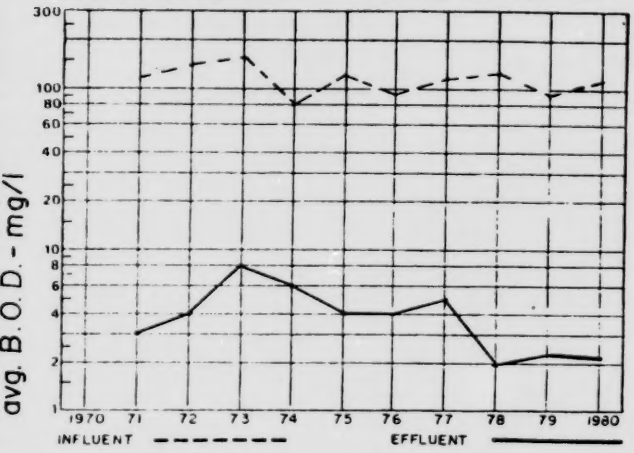
Type: Gas
Size: 50 lb/day

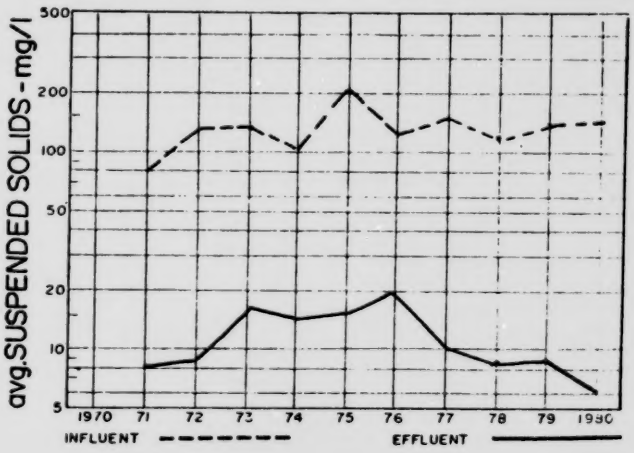
CONTACT TANK

Size: 4750 gal
Detention: 34 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000089 CAYUGA M P C P

MUNICIPALITY : HALDIMAND (CAYUGA)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL

CURRENT POPULATION : 16,427
POPULATION SERVED : 1,090
PERCENT SERVED : 6.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	15.498	.499	1.497		110.0	1.9	98	1.6	206.0	10.3	95	3.0	6.9	.3	94	.101
FEB	10.361	.357	.476		120.0	4.5	96	1.1	115.0	5.0	95	1.1	7.7	.3	96	.077
MAR	20.989	.677	2.220		94.0	2.0	97	1.9	165.0	10.0	93	3.2	6.1	4.2	31	.040
APR	24.790	.826	2.150		81.0	2.7	96	1.9	90.0	6.0	93	2.0	5.9	.2	95	.140
MAY	13.668	.441	.679		113.5	1.9	98	1.5	190.0	5.0	97	2.5	7.8	.2	96	.104
JUN	12.825	.427	.679		135.0	2.3	98	1.7	267.5	5.0	98	3.3	9.5	.2	97	.119
JUL	12.326	.397	1.101		80.5	1.4	98	.9	95.0	5.0	94	1.1	7.4	.3	95	.087
AUG	11.517	.371	1.331		79.0	1.3	98	.8	75.0	5.5	92	.8	7.8	.4	94	.085
SEP	12.203	.406	.743		155.0	1.8	98	1.8	235.0	5.0	97	2.8	8.5	.9	88	.092
OCT	13.677	.441	1.197		93.5	2.3	97	1.2	107.5	5.5	94	1.3	6.2	.7	87	.074
NOV	11.839	.394	.612		115.0	2.2	98	1.3	157.5	5.5	96	1.8	8.1	1.0	87	.084
DEC	13.463	.434	1.177		70.0	3.1	95	.9	95.0	7.0	92	1.1	5.4	.6	88	.065
TOTAL	173.156							17.1				24.5				1.068
AVERAGE		.473			103.8	2.2	97		149.8	6.2	95		7.2	.8	88	
MAXIMUM			2.220													
NO. OF SAMPLES					23	23			23	23			23	22		

DESIGN DATA - METRIC

WOOLWICH (ST. JACOBS)

PROJECT: Woolwich Twp. (St. Jacobs) WPCP

PROJECT NO.: 1-0063-67

TREATMENT: Extended Aeration

DESIGN FLOW: 0.95 $10^3 m^3/d$

RAW SEWAGE PUMPING:
Two, Type: FLYGT CP-3150
Size: 37.85 l/s @ 7.31 TDH

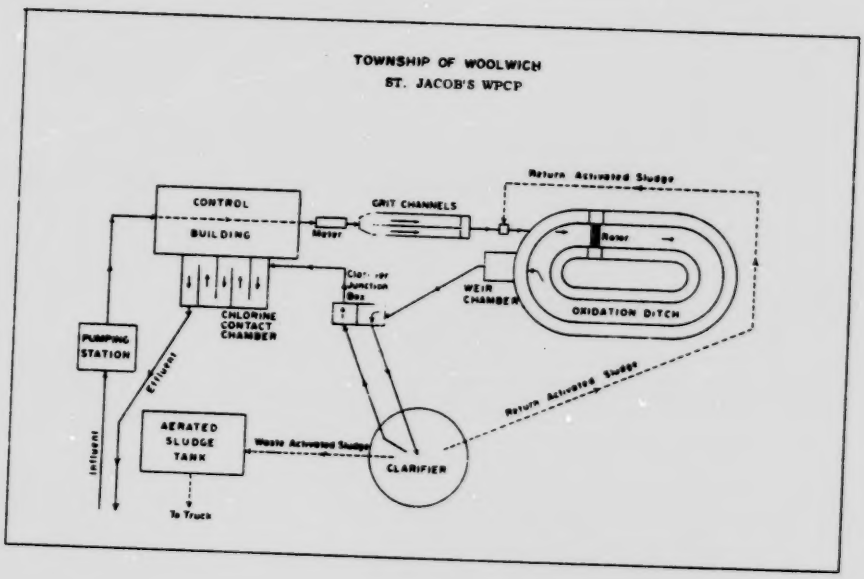
GRIT CHANNELS:
Two, 5.8m x 0.5m x 0.7m
Volume (each) 1.909m^3
Detention: (each) 2.8 min.

OXIDATION DITCH:
Volume: 909.2 m^3
WL Dept. 1.5m Detention: 22.8 hours

Rotor - Type: Pumps and Softners
Size: 4.57 m length (2)

CLARIFIER:
7.3m dia. x 2.9m swd
Volume: 122.74m^3
Detention: 3.1 hours
Mechanism: DORR OLIVER LONG
Overflow Rate: 22.732 m^3/m^2od

CHLORINE CONTACT CHAMBER:
5 passes, 3.7m x .8m x 1.5m awl
Volume: 21.82 m^3
Detention: 33 min.



DESIGN DATA - IMPERIAL

PROJECT: Woolwich Twp (St. Jacobs) WPCP

PROJECT NO. 1-0063-67

TREATMENT: Oxidation Ditch

DESIGN FLOW: 0.21 MGD

BOD - 200 mg/l

SS - 200 mg/l

RAW SEWAGE PUMPING:
Two, Type: FLYGT CP-3150
Size: 800 USGPM at 24' TDH

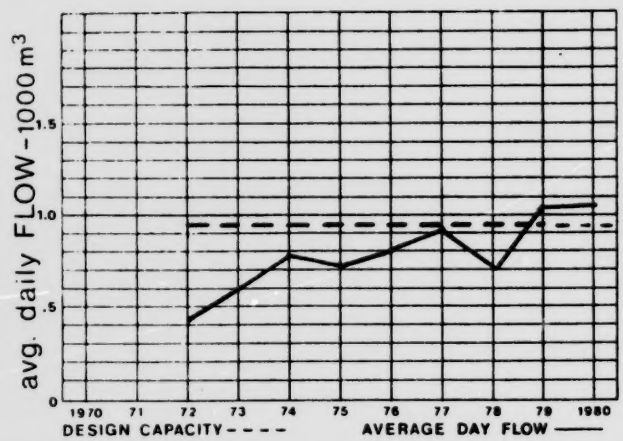
GRIT CHANNELS:
Two, 19' x 1.8' x 2.2'
Volume (each) 420 I. Gal.
Detention: (each) 2.8 min.

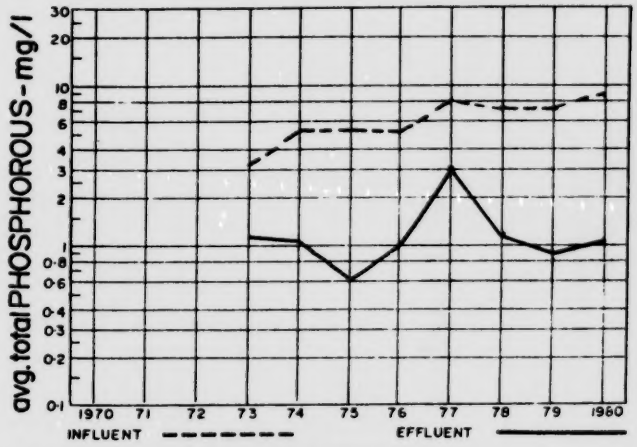
OXIDATION DITCH:
Volume: 200,000 I. Gal.
WL Dept. 5' Detention: 22.8 hours

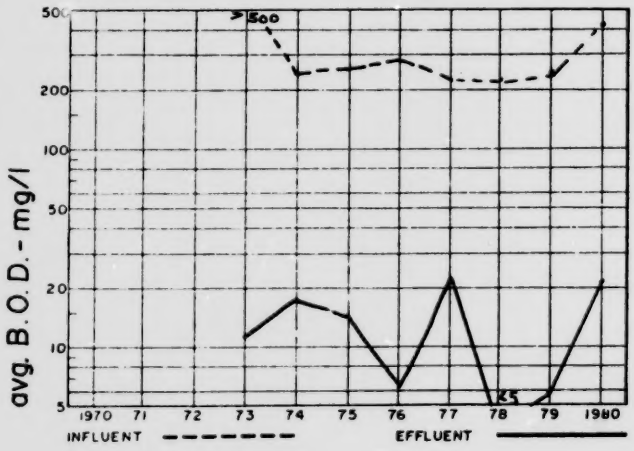
Rotor - Type: Pumps and Softners
Size: 15' length (2)

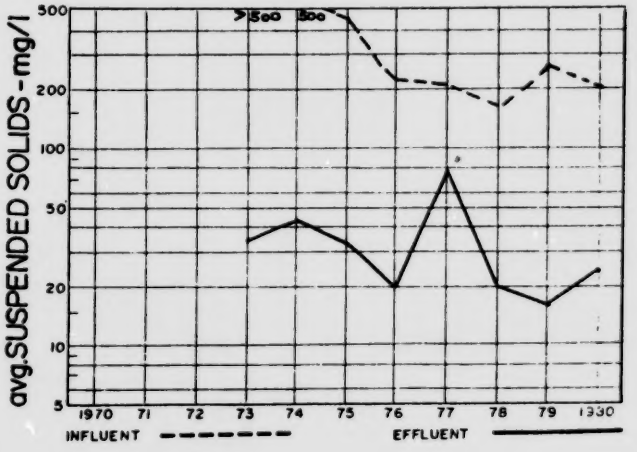
CLARIFIER:
24' dia. x 9.5' swd
Volume: 27,000 I. Gal.
Detention: 3.1 hours
Mechanism: DORR OLIVER LONG
Overflow Rate: 465 gpd/sq. ft.

CHLORINE CONTACT CHAMBER:
5 passes, each 12.3' x 2.5' x 5' awl
Volume: 4,800 I. Gal.
Detention: 33 min.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001211 ST JACOBS POLICE VILLAGE PLANT

MUNICIPALITY : WOOLWICH (ST.JACOBS)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL

CURRENT POPULATION : 16,392
POPULATION SERVED : 1,155
PERCENT SERVED : 7.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.954 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	35.545	1.146	2.353		348.0	5.1	98	12.1	124.0	11.0	91	4.0	3.8	.6	83	.112
FEB	33.329	1.149	1.346		470.0	14.0	97	15.1	212.0	24.0	88	6.2	8.9	2.3	74	.220
MAR	41.490	1.338	4.342		125.0	8.0	93	4.8	148.0	16.0	89	5.4	9.9	.7	92	.381
APR	50.906	1.696	2.330		172.5	2.3	98	8.6	120.0	16.0	86	5.2	7.4	.7	89	.338
MAY	49.637	1.601	2.604		290.0	9.5	96	13.9	127.0	17.0	86	5.4	6.4	.5	91	.292
JUN	41.479	1.383	1.790		155.0	3.8	97	6.2	123.0	5.0	95	4.8	7.3	2.3	68	.207
JUL	34.797	1.122	1.632		82.0	4.3	94	2.7	130.0	29.0	77	3.5	11.0	.9	91	.351
AUG	24.150	.779	1.983		223.0	10.0	95	5.1	262.0	33.0	87	5.5	18.0	1.4	91	.400
SEP	25.500	.850	1.439		225.0	2.1	99	5.6	197.0	16.0	91	4.6	8.0	1.1	86	.175
OCT	34.077	1.099	1.577		2095.0	189.0	90	64.9	235.0	95.0	59	4.7	11.5	2.5	78	.307
NOV	15.946	.531	.694		383.0	5.8	98	6.0	315.0	10.0	96	4.8	6.4	.1	97	.100
DEC	19.225	.620	.881		390.0	6.6	98	7.3	423.0	19.0	95	7.7	6.6	.3	94	.120
TOTAL	406.081							152.9				62.4				3.003
AVERAGE		1.110			413.2	21.7	94		201.3	24.2	87		8.7	1.1	86	
MAXIMUM			4.342													
NO. OF SAMPLES					29	29			102	102			29	27		

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

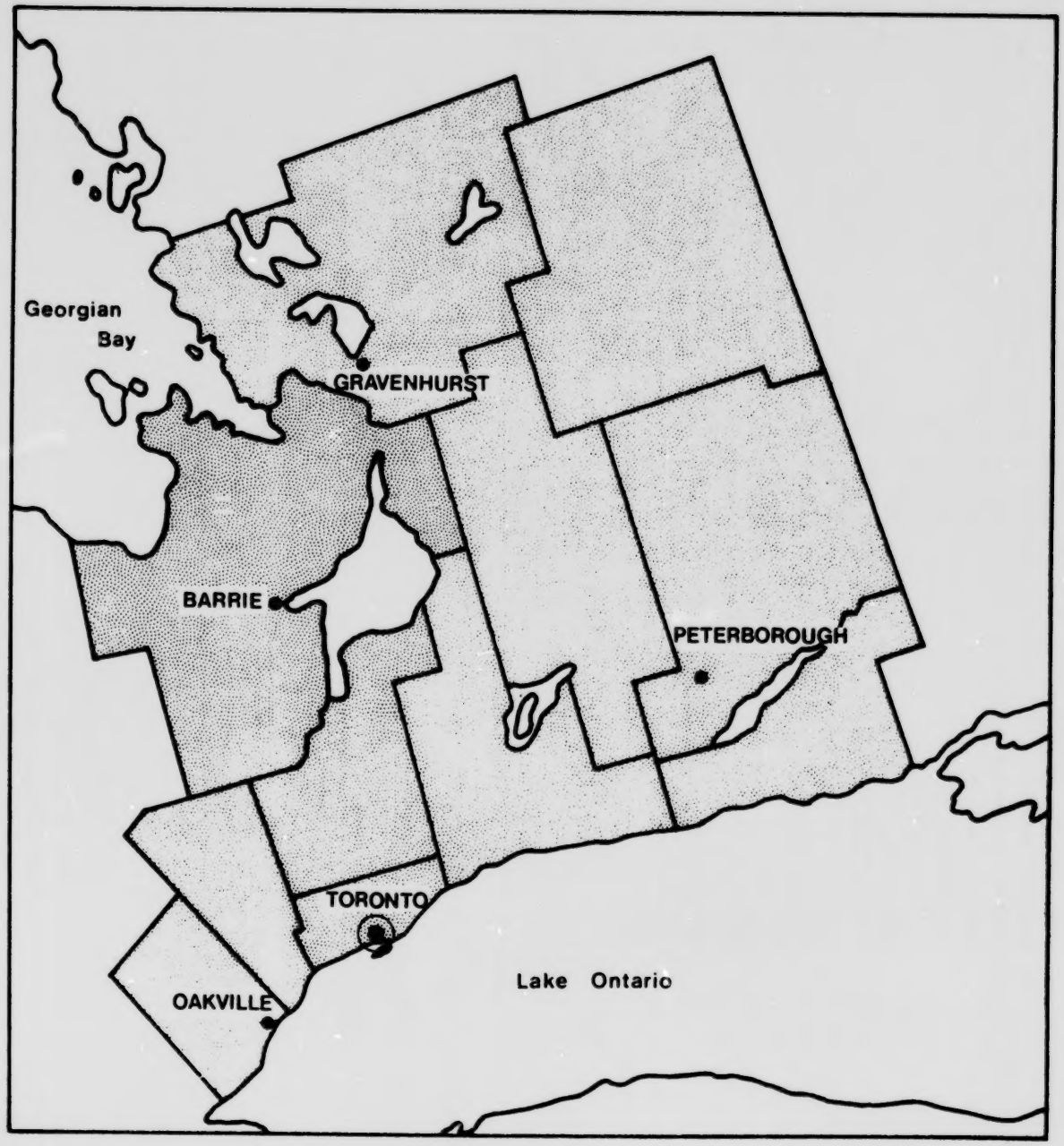
SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386

Ministry of the Environment
Ontario

Central Region

③



DESIGN DATA - METRIC

FENELON FALLS

PROJECT: Fenelon Falls WPCP

PROJECT NO: 1-0095-67

TREATMENT: Extended Aeration

DESIGN FLOW: 1.00 $10^3 m^3/d$

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 250 mg/l

FRANCES ST. P.S.
Pumps:
Type: Two submersibles
Size: each 6.283 l/s

OAK ST. P.S.
Pumps:
Type: Two, submersibles
Size: each 28.39 l/s

MAIN (PLANT) P.S.
Pumps:
Type: Three MORSE centrifugal
Size: each 41.6 l/s

GRIT CHANNELS
Size: Two, each 6.63m x .61m x .46m awd
Volume (each): 1.85 m^3
Retention(each): 2.7 min.

COMMINUTOR
Size: 25.4 cm
Bar screen/in bypass channel

OXIDATION DITCH
Width: 5.49m (at top)
Length: centres 30.48m apart

ROTOR
Type: pumps and softeners
Size: 4.27m x0.70m

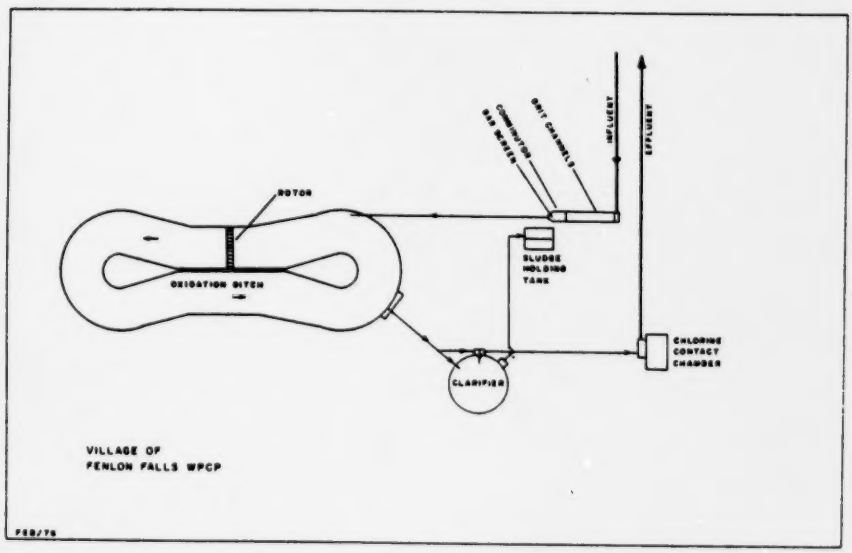
FINAL CLARIFIER
Type: one, circular
Size: 9.14m i.d. x 3.05m awd
Volume: 207.29m^3
Retention: 5.0 hr.
Loadings:
- Surface: 15.20 m^3/m^2ad
- Weir: 34.87 m^3/mwd

CHLORINE CONTACT CHAMBER
Size: one, 3.05m x 4.72m x 1.6m awd
Volume: 23.18 m^3
Retention: 33 min.

SLUDGE TRANSFER PUMP
Type: one, A.S. Leitch
Size: 16.2 l/s @ 14.02m TDH

SLUDGE HOLDING TANK
Type: two, rectangular
Size: each 3.67m x 1.5m x 2.7m awd
Volume: each 15.32 m^3

BLOWER
Type: one Utility Technology
Size: 18.38 l/s @ 41.37 kPa
Alum Stroage Tank capacity: 227.3m^3
ALUM STORAGE TANK Capacity: 227.3m^3



DESIGN DATA - IMPERIAL

PROJECT: Fenelon Falls WPCP

PROJECT NO. 1-0095-67

TREATMENT: Oxidation Ditch

DESIGN FLOW: 0.22 MIGD

BOD - Raw Sewage - 200 mg/l

SS - Raw Sewage - 250 mg/l

FRANCES ST. P.S.
Pumps:
Type: Two, submersibles
Size: each 83 IGPM

OAK ST. P.S.
Pumps:
Type: Two, submersibles
Size: each 375 IGPM

MAIN (PLANT) P.S.
Pumps:
Type: Three MORSE centrifugal
Size: each 550 IGPM

GRIT CHANNELS
Size: Two, each 21.75'x2'x1.5' swd
Volume(each): 407 I.G.
Retention(each: 2.7 min

COMMINUTOR
Size: 10-inch

Bar screen/in bypass channel

OXIDATION DITCH

Width: 18' (at top)
Length: centres 100' apart

ROTOR
Type: pumps and softeners
Size: 14'x2.3' dia.

FINAL CLARIFIER
Type: one, circular
Size: 30' i.d. x 10' awd
Volume: 45,600 I.G.
Retention: 5.0 hr
Loadings:
- Surface: 311 IG/ft^2/day
- Weir: 2340 I.G./ft/day

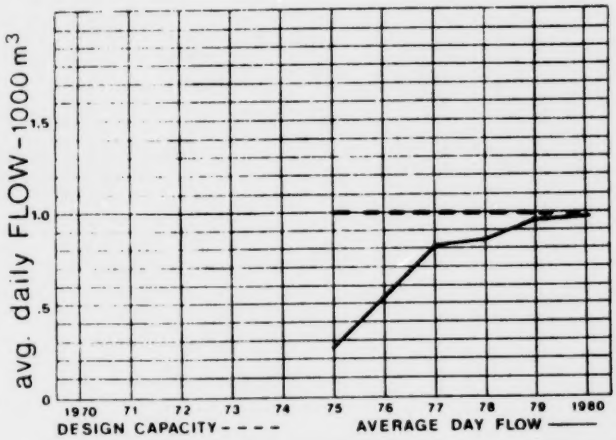
CHLORINE CONTACT CHAMBER
Size: one, 10'x15.5'x5.25'awd
Volume: 5100 I.G.
Retention: 33 min.

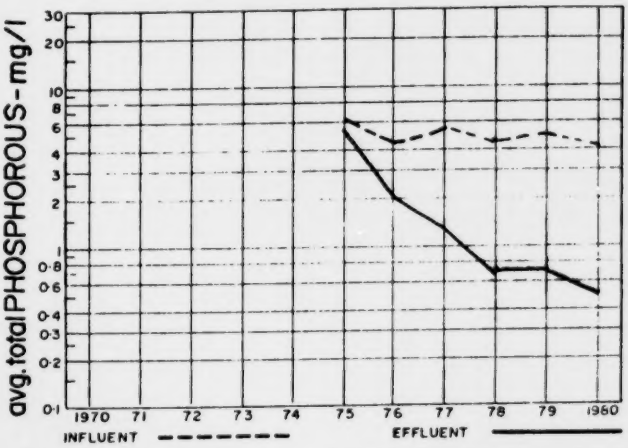
SLUDGE TRANSFER PUMP
Type: one, A.S.Leitch
Size: 214 gpm @ 46' TDH

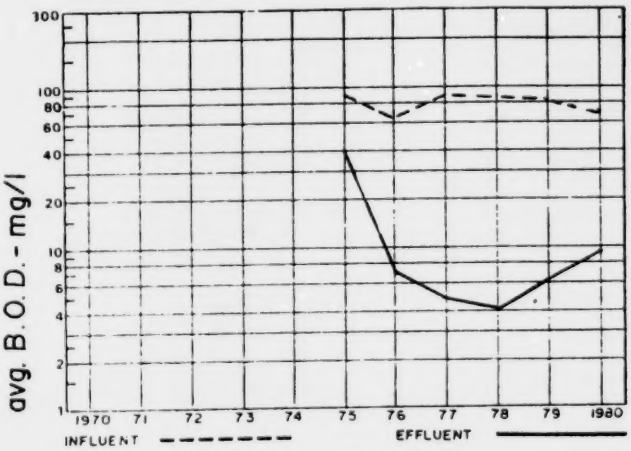
SLUDGE HOLDING TANK
Type: two, rectangular
Size: each 12'x5'x9'awd
Volume: each 3370 I.G.

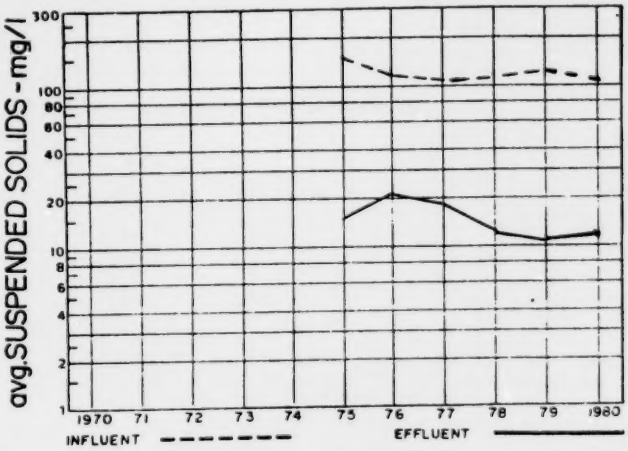
BLOWER
Type: one Utility Technology
Size: 44 cfm @ 6 psi

ALUM STORAGE TANK
Capacity: 5000 gal.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001612 FENELON FALLS MPCP

MUNICIPALITY : FENELON FALLS
REGION : 03 CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1.649
POPULATION SERVED : 1597
PERCENT SERVED : 95.06

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.000 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	20.360	.650	.650		60.0	16.0	73	.8	95.0	20.0	78	1.5	3.7	.7	81	.061
FEB	22.340	.770	.770		86.0	19.0	77	1.4	105.0	13.0	87	2.0	6.0	.8	86	.115
MAR	22.320	.720	.720		74.0	34.0	54	.8	110.0	40.0	63	1.5	4.6	1.3	71	.074
APR	36.790	1.230	1.230		33.0	5.0	84	1.0	85.0	7.0	91	2.8	3.7	.5	86	.118
MAY	29.550	.950	.980	2.380	70.0	11.0	84	1.7	85.0	10.0	88	2.2	4.9	.5	89	.130
JUN	30.350	1.010	1.500	2.470	115.0	2.5	97	3.4	105.0	10.0	90	2.8	5.0	.4	90	.138
JUL	38.860	1.250	1.630	2.470	70.0	5.0	92	2.5	140.0	8.0	94	5.1	4.5	.6	85	.150
AUG	43.210	1.390	1.670	2.470	115.0	.6	99	4.9	175.0	5.0	97	7.3	4.9	.4	91	.193
SEP	34.880	1.160	1.570	2.430	67.0	2.5	96	2.2	93.0	6.0	93	3.0	4.2	.4	89	.130
OCT	32.250	1.040	1.400	2.760	54.0	1.2	97	1.7	85.0	6.0	92	2.5	4.2	.3	90	.123
NOV	28.060	.940	.940		36.0	4.5	87	.8	75.0	8.0	89	1.8	2.0	.3	83	.047
DEC	25.870	.830	.830		54.0	*			75.0	8.0	89	1.7	2.3	.2	90	.054
TOTAL	364.840							21.7				34.7				1.333
AVERAGE		.995			69.5	9.2	86		102.3	11.7	88		4.1	.5	86	
MAXIMUM			1.670	2.760												
NO. OF SAMPLES					13	12			13	13			13	13		

DESIGN DATA - METRIC

HASTINGS

PROJECT Village of Hastings

PROJECT NO. 1-0084-76

TREATMENT: Oxidation Ditch

DESIGN FLOW: 1.1 $10^3 m^3/d$

PRIMARY TREATMENT

Screening
Bar Screen with 5.0 cm x0.6 cm bars @ 2.5 cm c/c

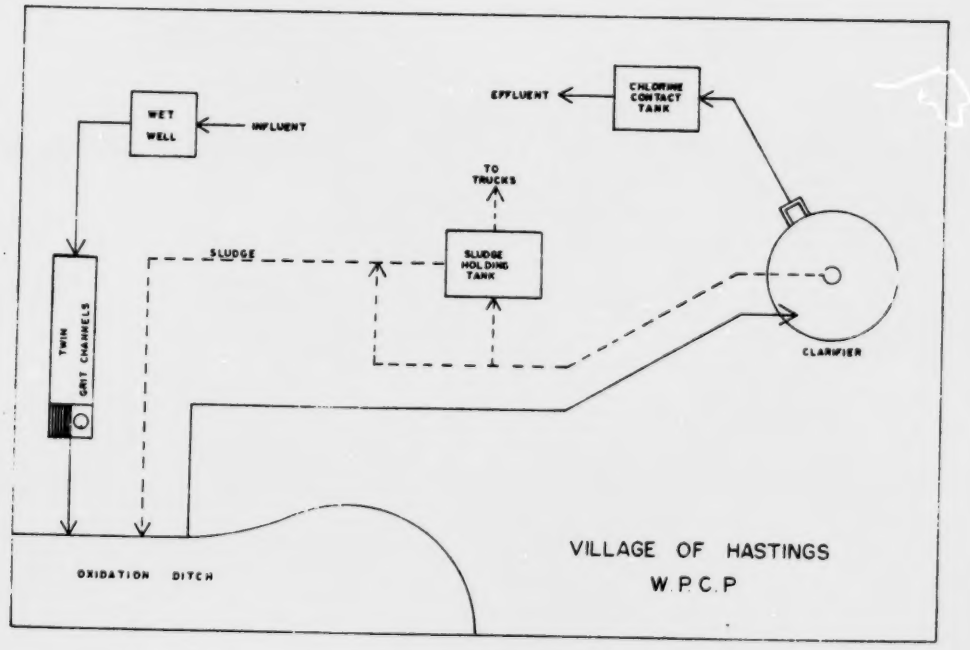
Grit Removal
2 Grit tanks 0.5m x 6.7m x 0.4m deep

SECONDARY TREATMENT

Oxidation Ditch
Volume: 1767.2 m^3
Detention: 40 hrs.
Motors: 3-14.9 kW @ 90 rpm.
Cage Rotor: 69.9 cm dia. x 18.3m long

Clarifier
Size: 8.8m dia. x 3.0m swd
Loading: Surface = 17.1 $m^3/m^2 \cdot d$
Weir = 38.1 $m^3/m \cdot d$

Sludge Handling
Storage Volume: 134.8 m^3
Blower: 39.7 l/s @ 41.4 kPa
8.4 l/s / 28.3 m^3



PROJECT Village of Hastings

DESIGN DATA - IMPERIAL

PROJECT NO. 1-0084-76

TREATMENT: Oxidation Ditch

DESIGN FLOW 0.233 MGD

PRIMARY TREATMENT

Screening
Bar Screen with 2" x ½" bars @ 1"c/c

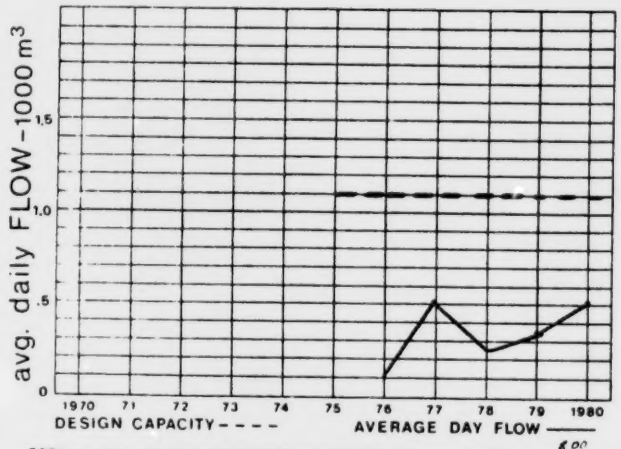
Grit Removal
2 Grit tanks 1.5' x 22' x 1.4' deep.

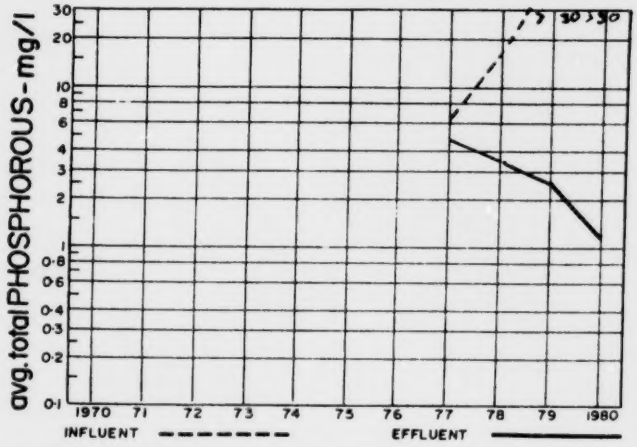
SECONDARY TREATMENT

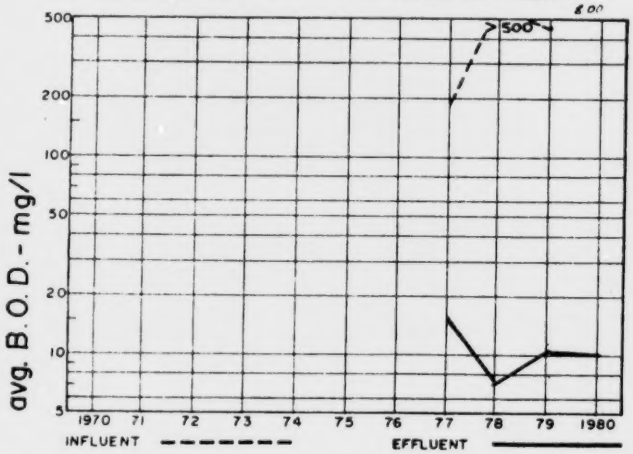
Oxidation Ditch
Volume: 62,400 $ft.^3$
Detention: 40 hrs.
Motors: 3 - 20 hp. @ 90 rpm.
Cage Rotor: 27½" dia. x 60' long.

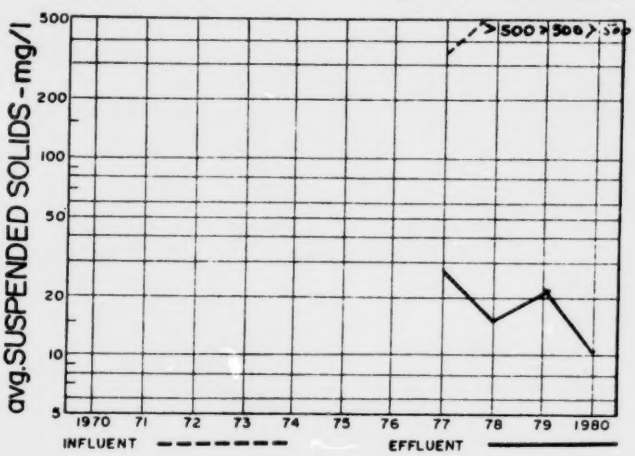
Clarifier
Size: 29' dia. x 10'SWD
Loading: Surface 350 gpd/ft^2
Weir 2560 gpd/ft

Sludge Handling
Storage Volume: 4760 $ft.^3$
Blower: 95 cfm @ 6 psi.
20 cfm/1000 $ft.^3$









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001827 HASTINGS MPCP

MUNICIPALITY : HASTINGS
REGION : 03 CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 951
POPULATION SERVED : 777
PERCENT SERVED : 81.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.059 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	13.519	.436	1.041		300.0	28.0	90	3.6	615.0	.5	99	8.3	43.0	.5	98	.574
FEB	7.622	.263	.559		250.0	7.0	97	1.8	375.0	5.0	98	2.8	37.0	1.6	95	.270
MAR	16.929	.546	1.340		920.0	7.0	99	15.4	5870.0	5.0	99	99.2	110.0	1.0	99	1.845
APR	27.974	.932	1.504		860.0	3.0	99	23.9	5460.0	5.0	99	152.5	95.0	1.0	98	2.630
MAY	17.371	.560	1.200		500.0	4.0	99	8.6	6560.0	5.0	99	113.8	108.0			
JUN	10.220	.341	.605		580.0	3.0	99	5.8	925.0	15.0	98	9.3	67.0	.8	98	.676
JUL	12.188	.393	.932		*	*			*	*			*	.7		
AUG	12.254	.395	.532		500.0	2.0	99	6.1	4185.0	13.0	99	51.1	89.0	.6	99	1.083
SEP	10.857	.362	.486		1600.0	34.0	97	17.0	4520.0	20.0	99	48.8	130.0	5.0	96	1.357
OCT	13.413	.433	.720		493.0	9.0	98	6.4	278.0	20.0	92	3.4	2.6	.8	69	.025
NOV	16.966	.566	1.137		*	*			*	*			*	.8		
DEC	30.802	.994	1.600		2000.0	4.5	99	61.4	6790.0	13.0	99	208.7	180.0	.8	99	5.520
TOTAL	190.115							150.5				698.3				13.980
AVERAGE		.518			800.3	10.1	98		3557.8	10.1	99		86.1	1.2	98	
MAXIMUM			1.600													
NO. OF SAMPLES					12	12			12	12			12	112		

DESIGN DATA - METRIC

NORWOOD

PROJECT: Village of NorwoodWPCP
PROJECT NO. 1-0125-67
DESIGN FLOW: 0.727 $10^3 m^3/d$
DESIGN POPULATION: 1500
BOD - Raw Sewage - 200 mg/l
SS - Raw Sewage - 250 mg/l

RAW SEWAGE PUMPS
Type: Two, Pacific CB0330
Size: (each) 30.7 l/s

COMMINUTOR
Type: Heligear HTM1
Size: 25.4 cm

GRIT CHANNELS
Size: Two, .30m x 5.49m x .30m awd
Volume (each) .636 m^3
Retention (one) 1.3 hr.

OXIDATION DITCH
Volume: 536.43 m^3
Retention: 17.7 hrs.

ROTOR
Type: Pumps and Softeners
Size: 698.5mm dia. x 3.11m long

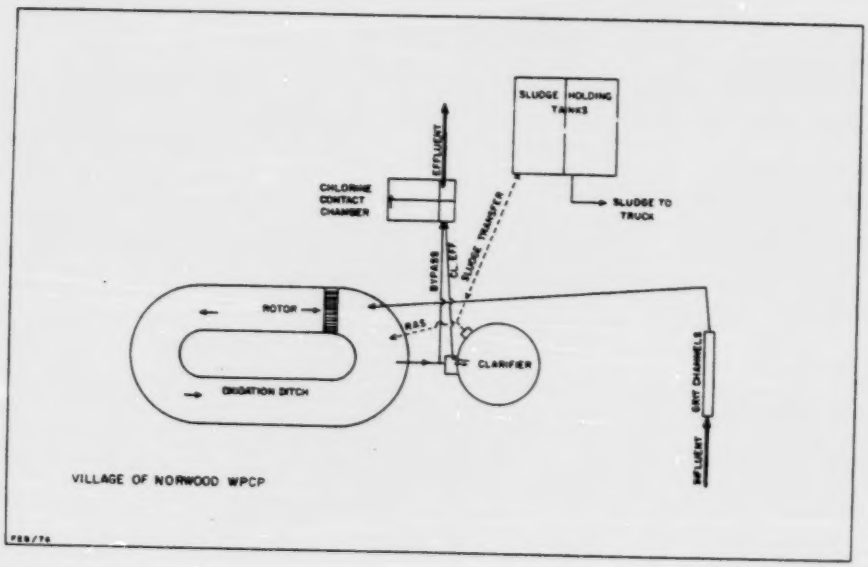
CLARIFIER
Size: One, 6.4m i.d. x 2.77m swd
Volume: 89.56m^3
Retention: 3.0 hr.

SLUDGE TRANSFER PUMP
Type: One Carter 800 D
Size: 12.0 l/s

CHLORINE CONTACT CHAMBER
Type: Two-pass
Size: each pass 2.96m x 1.34m x 1.82m awd
Volume (total): 14.09m^3
Retention: 30 min.

SLUDGE HOLDING TANKS
Size: Two,10.67m x 5.33m x 2.44m awd
Volume (total): 277.76m^3

BLOWER
Type: One Gatx DA105
Size: 7.46 kW



DESIGN DATA - IMPERIAL

PROJECT: Village of Norwood WPCP
PROJECT NO. 1-0125-67
DESIGN FLOW: 0.16 MIGD
DESIGN POPULATION: 1500
BOD - Raw Sewage - 200 mg/l
SS - Raw Sewage - 250 mg/l

RAW SEWAGE PUMPS
Type: Two, Pacific CB0330
Size: (each) 487 USGPM

COMMINUTOR:
Type: Heligear HTM1
Size: 10-inch

GRIT CHANNELS
Size: Two, 1.25'x10'x1'awd
Volume (each): 140 I.G.
Retention (one): 1.3 hr

OXIDATION DITCH
Volume: 118,000 I.G.
Retention:17.7 hrs

ROTOR
Type: Pumps and Softeners
Size: 27.5" dia x 10.2'l

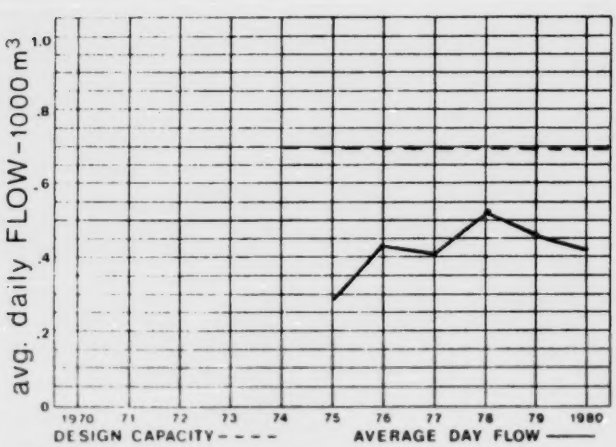
CLARIFIER
Size: One, 21'i.d. x 9.1'swd
Volume: 19,700 I.G.
Retention: 3.0 hr

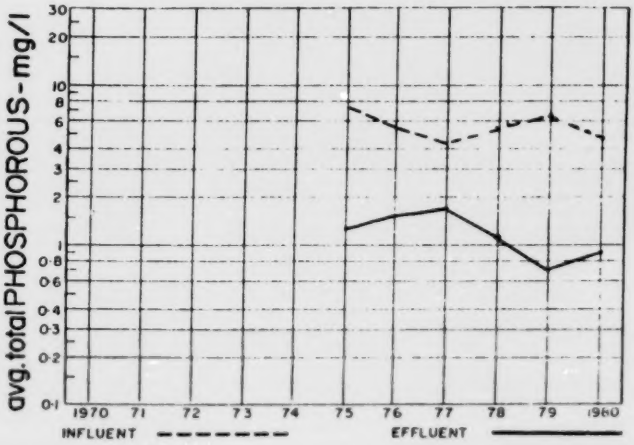
SLUDGE TRANSFER PUMP
Type: One Carter 800 D
Size: 159 gpm

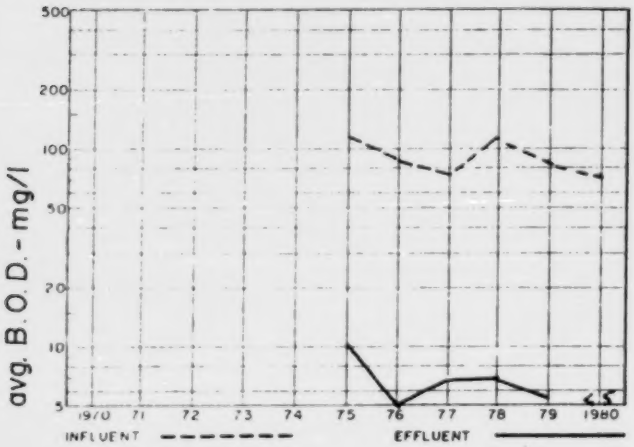
CHLORINE CONTACT CHAMBER
Type: Two-pass
Size: each pass 9.7' x 4.4' x 5.9' awd
Volume (total): 3100 I.G.
Retention: 30 min.

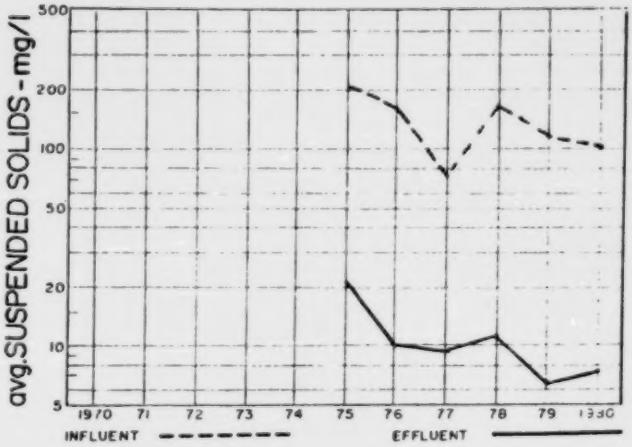
SLUDGE HOLDING TANKS
Size: Two, 35'x17.5' x 8' awd
Volume (total): 61,100 I.G.

BLOWER
Type: One Gatx DA105
Size: 10 HP









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110001499 NORWOOD MPCP

MUNICIPALITY : NORWOOD
REGION : 03 CENTRAL

TREATMENT FACILITY : OXIDATION DITCH
PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,288
POPULATION SERVED : 1,120
PERCENT SERVED : 86.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.727 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	13.689	.442	.513	.440	73.0	16.5	77	.7	100.0	22.5	77	1.0	5.3	.9	81	.059
FEB	11.565	.399	.455	.430	122.5	4.5	96	1.3	267.5	11.5	95	2.9	11.4	.7	93	.124
MAR	17.026	.549	1.914	2.637	39.5	5.2	86	.5	60.0	8.5	85	.8	3.0	.8	72	.037
APR	17.947	.598	.704	2.500	47.0	5.0	89	.7	62.5	4.5	92	1.0	3.6	1.5	58	.038
MAY	15.531	.501	.586	1.864	70.0	3.0	95	1.0	100.0	5.0	95	1.4	4.5	1.5	66	.047
JUN	11.689	.389	.418	1.955	105.0	2.0	98	1.2	160.0	5.0	96	1.8	6.9	.7	89	.072
JUL	11.109	.358	.409	2.000	13.0	1.8	86	.1	15.0	6.0	60	.1	1.6	.7	56	.010
AUG	10.210	.320	.373	1.909	45.0	1.0	97	.4	80.0	5.0	93	.7	3.9	.8	79	.032
SEP	10.666	.356	.368	1.955	44.0	1.2	97	.4	45.0	5.0	88	.4	1.6	.8	50	.009
OCT	11.044	.356	.396	1.909	37.5	2.0	94	.3	32.5	5.0	84	.3	2.9	.5	81	.026
NOV	10.485	.350	.377	1.909	81.0	2.3	97	.8	93.0	6.0	93	.9	5.0	.5	90	.048
DEC	12.072	.389	.423	1.909	220.0	5.5	97	2.5	195.0	5.0	97	2.2	7.8	1.8	76	.072
TOTAL	153.033							10.5				14.0				.574
AVERAGE		.417			74.7	4.1	94		100.8	7.4	92		4.7	.9	80	
MAXIMUM			1.914	2.637												
NO. OF SAMPLES					19	19			19	19			19	132		

TERTIARY TREATMENT PLANTS

Ministry of the Environment
Ontario

Southwestern Region
①

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

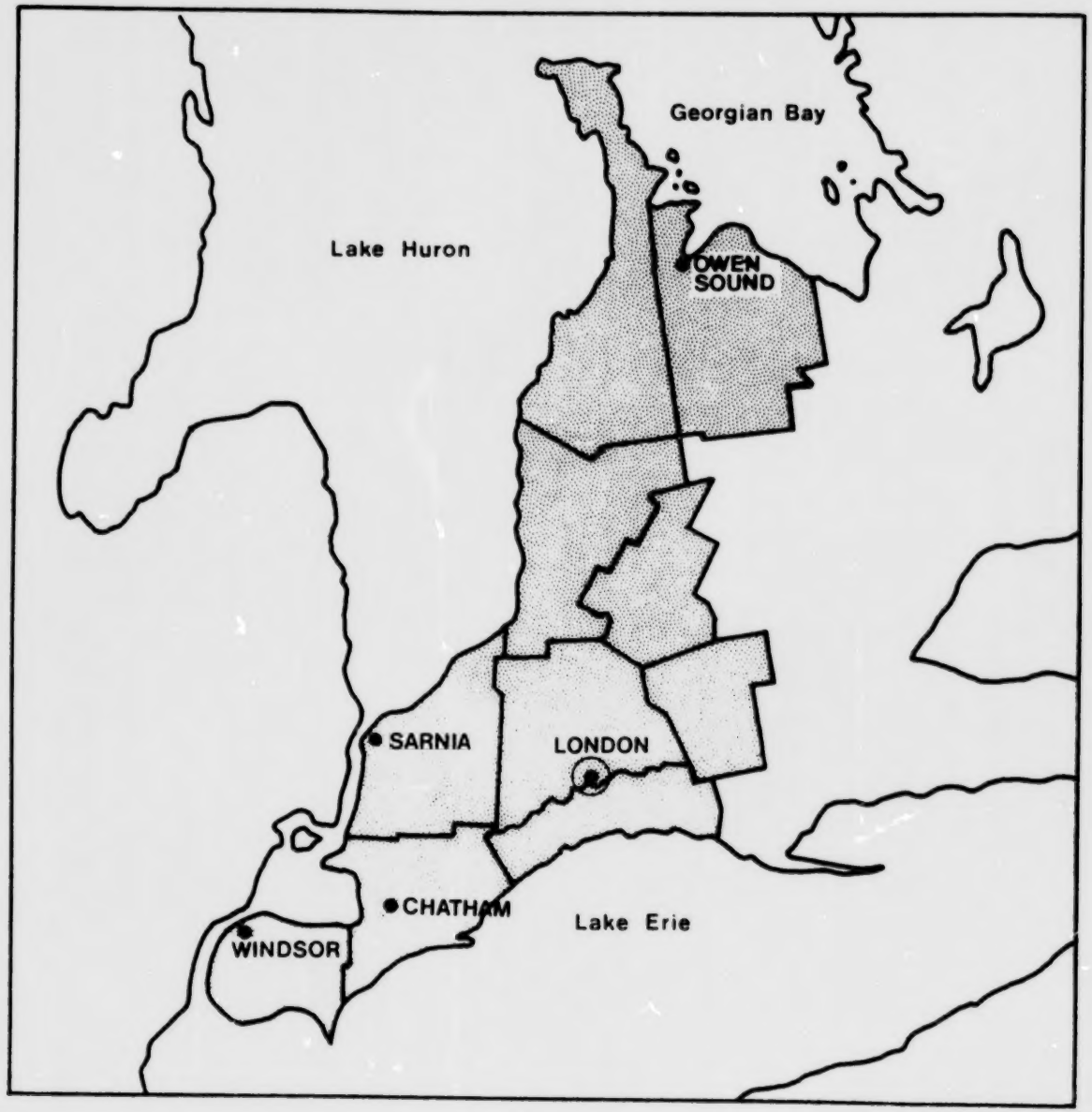
Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Ministry of the Environment
Ontario

Southwestern Region

①



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 1100005/9 PETROLIA

MUNICIPALITY : PETROLIA
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EFFLUENT FILTRATION
CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 4,315
POPULATION SERVED : 4,200
PERCENT SERVED : 97.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.182 1000 M3 DESIGN BOD5 : 0.0 MG/L DESIGN SUSP.SOLIDS : 0.0 MG/L

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	49.364	1.702	5.132		36.0	2.4	93	1.6	41.0	3.0	92	1.8	3.6	*		
FEB	42.743	1.474	4.296		36.0	1.6	95	1.4	27.0	6.0	77	.8	4.6	*		
MAR	91.245	3.379	9.428		56.0	3.8	93	4.7	48.0	7.5	84	3.6	7.2	*		
APR	92.044	3.068	9.056		56.0	1.4	97	5.0	106.0	.5	99	9.7	4.3	*		
MAY	57.662	1.860	9.060		*	*			*	*			*	*		
JUN	46.761	1.559	3.805		155.0	.1	99	7.2	28.0	4.5	83	1.0	4.3	1.3	69	.140
JUL	46.656	1.505	4.555		*	*			*	*			*	*		
AUG	43.215	1.394	3.973		86.0	*			108.4	.4	99	4.6	8.6	*		
SEP	47.143	1.571	3.641		71.0	2.2	96	3.2	80.4	3.6	95	3.6	5.8	*		
OCT	52.562	1.696	4.214		32.0	.8	97	1.6	95.5	2.7	97	4.8	6.0	*		
NOV	40.146	1.338	2.146		86.0	2.3	97	3.3	113.6	19.7	82	3.7	6.5	*		
DEC	50.802	1.639	5.373		71.5	2.1	97	3.5	87.8	4.4	94	4.2	4.3	*		
TOTAL	660.343							31.9				38.4				.140
AVERAGE		1.849			68.5	1.8	97		73.5	5.2	92		5.5	1.3	76	
MAXIMUM			9.428													
NO. OF SAMPLES					15	14			15	15			15	1		

DESIGN DATA - METRIC

STRATFORD

PROJECT City of Stratford WPCP

PROJECT NO. 1-0156-68

TREATMENT Activated Sludge

DESIGN FLOW 27.28 $10^3 m^3/d$

DESIGN POPULATION 30,000

BOD - Raw Sewage 140 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 95%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model B (11.0m)

Grit Removal

Type: Dorr Detritor
Size: One 6.1m x 6.1m x .3m ($11.37 m^3$)
Retention: 0.9 min.

Primary Sedimentation

Type: Infilco
Size: Four 24.4m x 3.2m swd ($6.0 \times 10^3 m^3$)
NOTE: Two used for storm flows only.
Retention: 2.7 hr (2 cl)
Loading: Surface, 29.3 $m^3/m^2 \cdot d$
Weir, 178.8 $m^3/m \cdot d$

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air; triple-pass
Size: Five 26.1m x 7.8m (avg) x 4.0m ($4.41 \times 10^3 m^3$)
Retention: 3.9 hr

Diffusers

Type: Activated Sludge Ltd. Alundum Domes

Air Supply

Type: Roots-Connersville
Size: Three 731.3 l/s

Secondary Sedimentation

Type: Infilco
Size: Two 24.3m dia. x 2.4m swd ($3.205 \times 10^3 m^3$)
Retention: 2.7 hr
Loading: Surface, 29.3 $m^3/m^2 \cdot d$

CHLORINATION

Chlorine Contact Chamber

Size: 20.4m x 8.2m x 2.4m ($409.14 m^3$)
Retention: 22 min.

Chlorinator

One F & P 226.8 kg/d

OUTFALL

Avon River

SLUDGE HANDLING

Digestion System - Heated, two-stage

Type: Gas Mixed
Size: One 22.2 m dia. x 7.9m swd ($283.2 m^3$)

Primary Stage (inner)

Size: $1914.4 m^3$
Loading: 28.4 $kg/m^3 \cdot d$

Secondary Stage (outer ring)

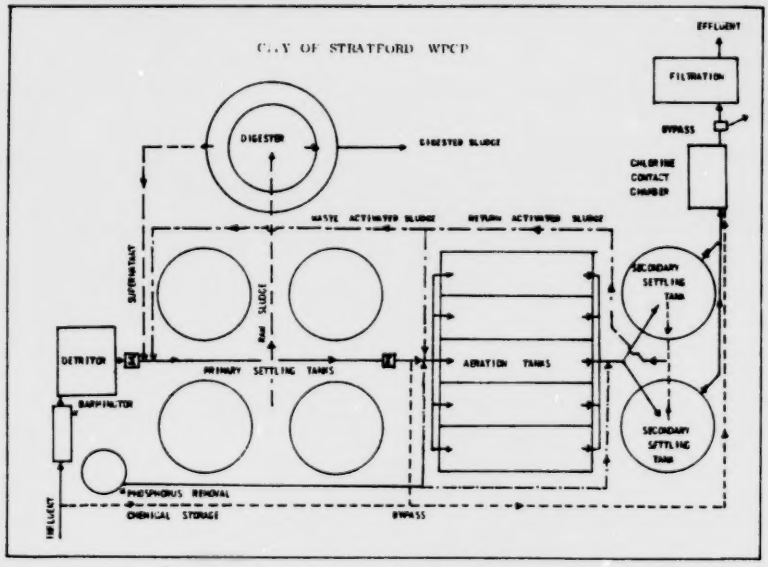
Size: $917.37 m^3$
Total Loading: 19.38 $kg/m^3 \cdot d$

TERTIARY TREATMENT

Rate: 36.4 $10^3 m^3/d$ (70.5 $m^3/m^2 \cdot d$)
Type: Four, variable declining rate anthacit and sand filters
Size: (each) 4.0m x 7.9m

Phosphorus Removal

Size: $27.28 m^3$



DESIGN DATA - IMPERIAL

PROJECT City of Stratford WPCP

PROJECT NO. 2-0002-57

TREATMENT Activated Sludge

DESIGN FLOW 6.0 mgd

DESIGN POPULATION 30,000

BOD - Raw Sewage 140 mg/l
- Removal 90%

SS - Raw Sewage 250 mg/l
- Removal 95%

PRIMARY TREATMENT

Comminution

Type: Barminutor
Size: One Model B (36")

Grit Removal

Type: Dorr detritor
Size: One 20' x 20' x 1' (2500 gal)
Retention: 0.9 min

Primary Sedimentation

Type: Infilco
Size: Four 80' dia x 10½' swd (1.32 mil gal)
NOTE: Two used for storm flows only
Retention: 2.7 hr (2 cl)
Loading: Surface, 600 gal/ft^2/day
Weir, 12,000 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air; triple-pass
Size: Five 85½' x 25' 8" (avg) x 13' (0.97 mil gal)
Retention: 3.9 hr

Diffusers

Type: Activated Sludge Ltd. Alundum Domes

Air Supply

Type: Roots-Connersville
Size: Three 1750 cfm

Secondary Sedimentation

Type: Infilco
Size: Two 80' dia x 11' 3" swd (0.705 mil gal)
Retention: 2.7 hr
Loading: Surface, 600 gal ft^2/day
Weir, 12,000 gal ft/day

CHLORINATION

Chlorine Contact Chamber

Size: 67' x 27' x 8' (90,000 gal)
Retention: 22 min

Chlorinator

One F & P 500 lb/day

OUTFALL

Avon River

SLUDGE HANDLING

Digestion System - Heated, two-stage

Type: Gas mixed
Size: One 73' dia x 26' swd (100,00 cu ft or 0.624 mil gal)

Primary Stage (inner)

Size: 67,600 cu ft
Loading: 2.8 lb/cu ft/mo

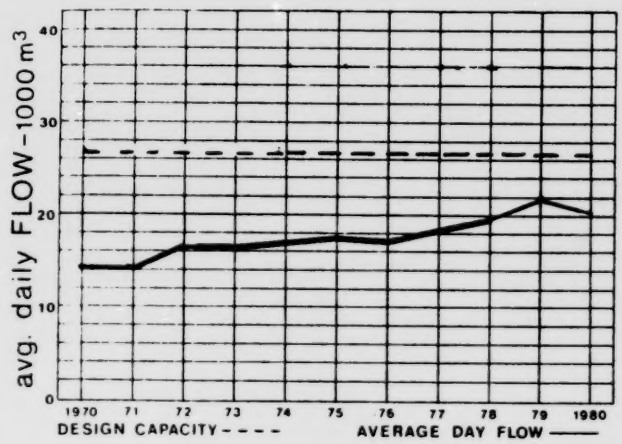
Secondary Stage (outer ring)

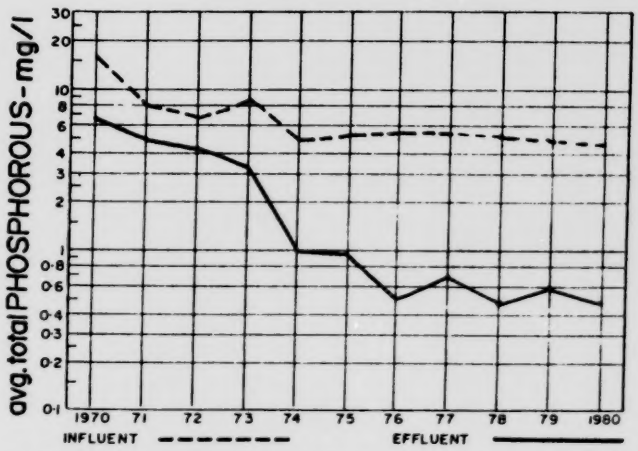
Size: 32,400 cu ft
Total Loading: 1.9 lb/cu ft/mo

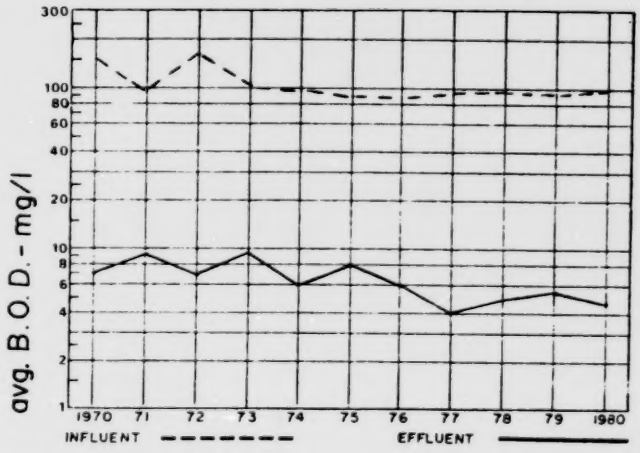
TERTIARY TREATMENT

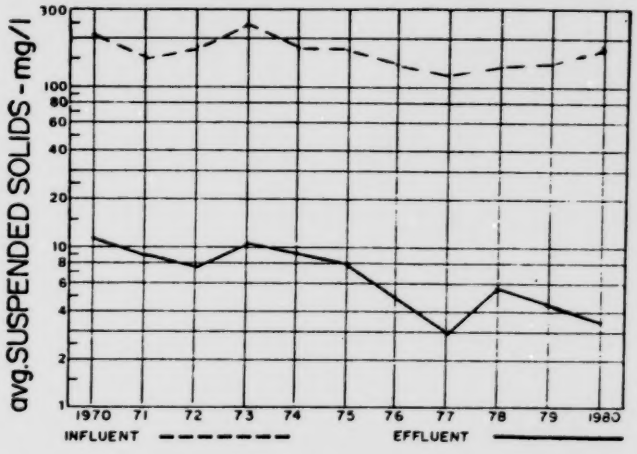
Rate: 9 MGD (5 USGPM / ft^2)
Type: Four, variable declining rate anthacit and sand filters
Size: (each) 13' x 26'

PHOSPHORUS REMOVAL









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000702 STRATFORD W P C P (TERTIARY)

MUNICIPALITY : STRATFORD
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : EFFLUENT FILTRATION
CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 26,515
POPULATION SERVED : 26,517
PERCENT SERVED : 100.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 27.276 1000 M3 DESIGN BOD5 : 140.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	575.300	18.500	24.800	77.300	99.0	9.7	90	51.3	197.0	4.3	97	110.8	4.5	1.3	70	1.835
FEB	463.600	15.990	21.700	26.800	95.0	6.1	93	41.2	222.0	4.4	98	100.8	4.6	1.4	68	1.488
MAR	731.800	23.600	60.000	77.300	62.0	7.1	88	40.1	124.0	3.3	97	88.3	3.3	.4	85	2.093
APR	853.500	28.500	57.900	77.300	61.6	6.0	90	47.4	97.0	3.8	96	79.5	2.8	.5	80	1.929
MAY	650.400	21.000	41.000	77.300	104.0	5.7	94	63.9	177.0	7.3	95	110.3	4.4	.4	89	2.556
JUN	569.600	19.000	26.400	77.300	86.5	3.6	95	47.2	156.5	4.9	96	86.3	4.5	.3	91	2.370
JUL	477.100	15.400	21.500	77.300	122.4	3.0	97	56.9	286.0	2.3	99	135.3	6.0	.3	93	2.700
AUG	542.200	17.500	31.000	77.300	142.0	2.1	98	75.8	287.0	2.9	98	154.0	7.0	.3	95	3.627
SEP	594.100	19.800	35.500	77.300	125.2	2.4	98	72.9	294.8	1.8	99	174.0	5.8	.2	96	3.327
OCT	686.400	22.100	30.000	63.200	83.5	1.8	97	56.0	108.0	1.5	98	73.1	4.9	.1	96	3.233
NOV	613.600	20.500	25.600	41.800	114.0	2.8	97	68.2	145.0	2.2	98	87.6	5.9	.4	92	3.387
DEC	754.900	24.300	50.300	77.300	114.8	5.1	95	82.8	159.0	2.4	98	118.2	4.3	.6	85	2.838
TOTAL	7512.500							704.2				1318.7				31.383
AVERAGE		20.516			100.8	4.6	95		187.7	3.4	98		4.8	.5	88	
MAXIMUM			60.000	77.300												
NO. OF SAMPLES					52	51			51	52			52	52		

Ministry of the Environment
Ontario

West Central Region

(2)

REGIONAL OFFICE

HAMILTON
119 King St.W.
P.O. BOX 2112
811-521-7640

DISTRICT OFFICES

Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

Ministry of the Environment
Ontario

West Central Region

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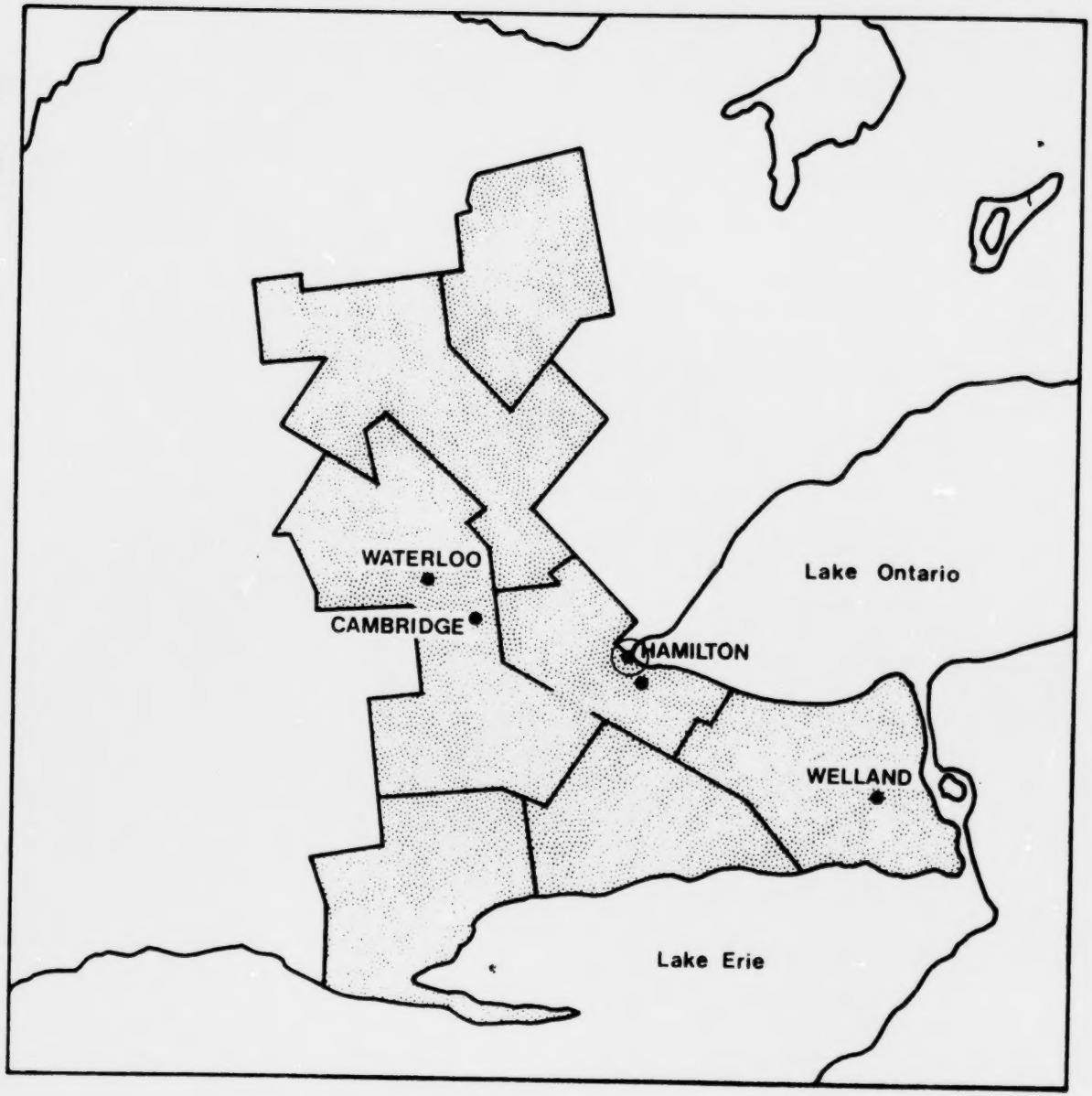


DESIGN DATA - METRIC

ORANGEVILLE

DESIGN DATA

PROJECT NO.: 1-0077-67

TREATMENT: Activated Sludge

DESIGN FLOW: 6.819 $10^3 m^3/d$

DESIGN POPULATION: 15,000

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 250 mg/l

LIFT PUMPS
Type: 4-Meyers Submersible
Size: 63.1 l/s at 11.8m TDH
78.9 l/s at 9.5m TDH

PRIMARY TREATMENT
Type: Worthington Comminutor

Grit Removal
Type: D.O.L. Detritor

Primary Sedimentation
Type: Spiraflow (peripheral feed)
Size: One 10.7m dia. x 3.7m swd
Volume: 327.31 m^3
Retention: 2.31 hr.
Loading: Surface, 38.13 $m^3/m^2 \cdot d$
Weir, 109.51 $m^3/m \cdot d$

Type: EIMCO
Size: 10.7m x 3.7m swd

SECONDARY TREATMENT

Aeration Tanks
Type: Diffused air; single-pass
Size: Four 19.2m x 64m x 3.7m
Volume: 900.11 m^3
Retention: 6.33 hr.
Diffusers: Dorr Inka

Air Supply
Type: Powlesland-Bailey fan
Size: Four 1337.3 l/s at 762mm wc

Secondary Sedimentation
Type: Dorr
Size: One 13.7m dia. x 2.8m swd
Volume: 442.33 m^3
Retention: 3.12 hrs.
Loading: Surface, 22.98 $m^3/m^2 \cdot d$
Weir, 86.72 $m^3/m \cdot d$

Type: EIMCO
Size: One 20.12m dia. x 3.05m swd

CHLORINATION
Type: Sodium Hypochloride
Size: 27.28 m^3 storage (Flow matched by BIF Diaphram Pumps)

Chlorine Contact Chamber
Size: One 7.31m x 3.05m x 2.74m
Volume: 70.0 m^3
Retention: 29.6 min.

TERTIARY TREATMENT
Type: Hardinge Automatic Backwash Filter
Size: 4.9m wide x 20.48m long
Peak Load Design: 20.48 $10^3 m^3/d$
Average Design: 6.82 $10^3 m^3/d$

Effluent Pumps
Type: 2-Peerless Hollow Shaft
Size: 236.6 l/s at 4.88 m TDH

Phosphate Removal
Size: 40.9 m^3 Alum Storage
Flow matched by BIF Diaphram Pumps

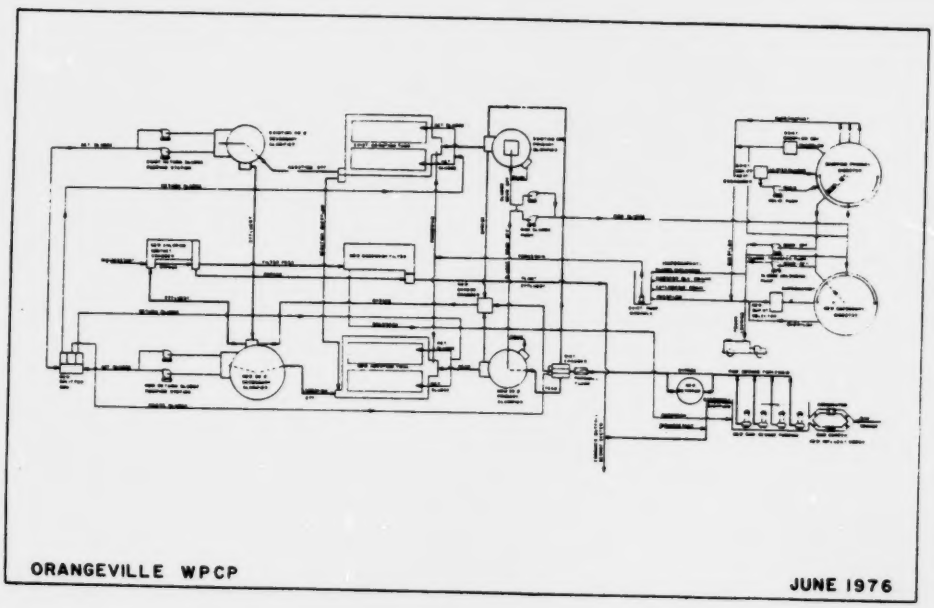
OUTFALL
- to Credit River

SLUDGE HANDLING

Digestion System - Two-Stage

Primary:
Type: Carter gas-mixed, floating cover
Size: One 13.7m dia. x 6.10m swd
Volume: 977.39 m^3
Loading: 15.3 $kg/m^3 \cdot d$

Secondary:
Type: Walker Process Gas Holding Cover
Size: 13.7m dia. x 6.1m swd



ORANGEVILLE WPCP

JUNE 1976

DESIGN DATA - IMPERIAL

ORANGEVILLE

DESIGN DATA

PROJECT NO. 1-0077-67

TREATMENT: Activated Sludge

DESIGN FLOW: 1.50 MIGD

DESIGN POPULATION: 15,000

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 250 mg/l

LIFT PUMPS
Type: 4 - Myers Submersible
Size: 833.11 Igpm at 39' TDH
1041.39 Igpm at 31' TDH

PRIMARY TREATMENT
Type: Worthington Comminutor

Grit Removal
Type: D.O.L. Detritor

Primary Sedimentation
Type: Spiraflow (peripheral feed)
Size: One 35' dia. x 12' swd
Volume: 72,000 gal.
Retention: 2.31 hr.
Loading: Surface, 780 gal/ ft^2/day
Weir, 7350 gal/ft./day

Type: EIMCO
Size: 35' x 12' swd

SECONDARY TREATMENT

Aeration Tanks
Type: Diffuser air; single-pas
Size: Four 63' x 21' x 12'
Volume: (198,000 gal.)
Retention: 6.33 hr.
Diffusers: Dorr Inka

Air Supply
Type: PowTesland-Bailey fan
Size: Four 3200 scfm at 30" wc

Secondary Sedimentation
Type: Dorr
Size: One 45' dia. x 9.17' swd
Volume: 9',300 gal.
Retention: [illegible] hrs.
Loading: [illegible]rface, 470 gal/ft^2/day
Weir, 5820 gal/ft/day

Type: EIMCO
Size: One 66' dia. x 10' swd

CHLORINATION
Type: Sodium Hypochloride
Size: 6000 gal. storage (Flow matched by BIF Diaphram Pumps)

Chlorine Contact Chamber
Size: One 24.0' x 10' x 9'
Volume: 15,400 gal.
Retention: 29.6 min.

TERTIARY TREATMENT
Type: Hardinge Automatic Backwash Filter
Size: 16' wide x 100' long
Peak Load Design: 4.5 MIGD
Average Design: 1.5 MIGD

Effluent Pumps
Type: 2-Peerless Hollow Shaft
Size: 3750 Us gpm at 16' TDH

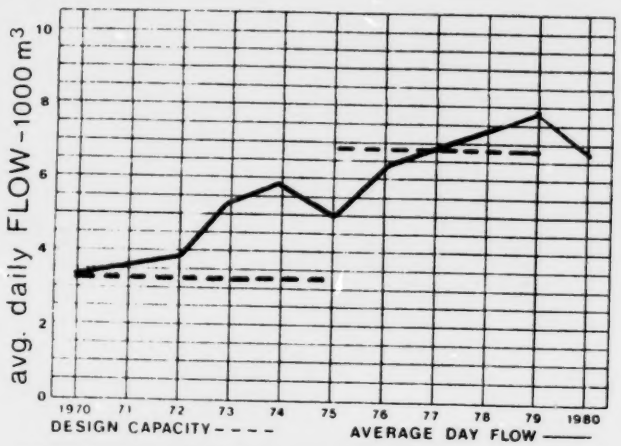
Phosphate Removal
Size: 9000 gal. Alum Storage
Flow matched by BIF Diaphram Pumps

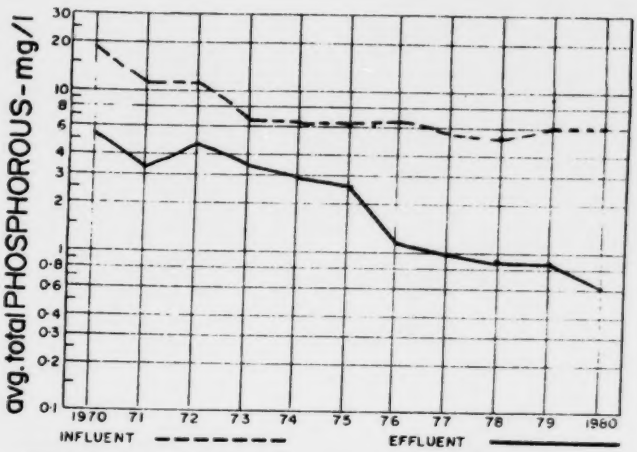
OUTFALL
- to Credit River

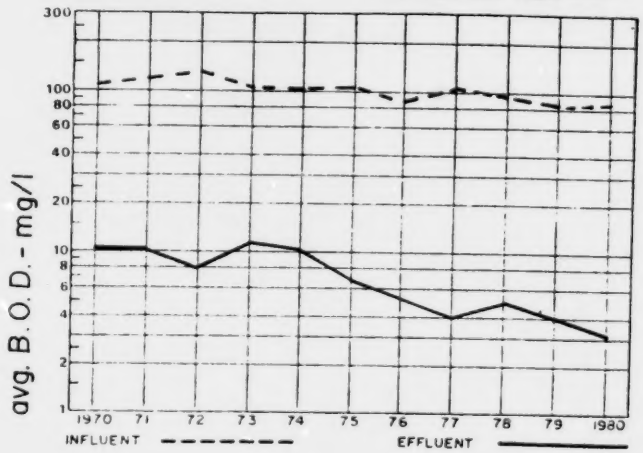
SLUDGE HANDLING

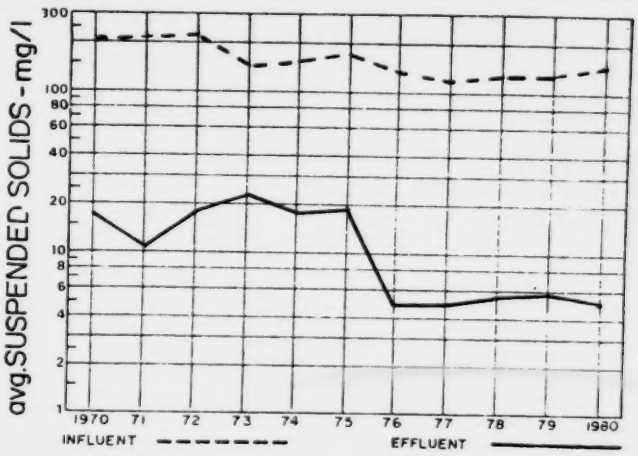
Digestion System - Two-Stage
Primary:
Type: Carter gas-mixed, floating cover
Size: One 45' dia. x 20' swd
Volume: 34,500 cu. ft. or 215,000 gal.
Loading: 1.5 lb./ cu. ft./mon.

Secondary:
Type: Walker Process Gas Holding Cover
Size: 45' Dia. x 20' swd









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000542 ORANGEVILLE MPCP (TERTIARY)

MUNICIPALITY : ORANGEVILLE **
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EFFLUENT FILTRATION
CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 13,034
POPULATION SERVED : 14,000
PERCENT SERVED : 107.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 6.819 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	232.000	7.480	15.300		91.3	2.9	96	20.5	125.0	6.3	94	27.5	7.4	1.1	84	1.457
FEB	162.400	5.590	6.200		128.0	5.5	95	19.8	166.0	9.0	94	25.4	7.6	1.4	81	1.020
MAR	215.800	6.960	14.400		99.0	2.1	97	20.9	172.0	7.1	95	35.5	8.7	1.1	86	1.627
APR	278.400	9.280	15.700		67.0	3.7	94	17.6	120.0	6.8	94	31.5	4.3	.5	87	1.055
MAY	213.700	6.890	9.200		74.0	6.6	91	14.4	127.0	5.0	96	26.0	5.1	.4	91	.996
JUN	176.000	5.870	7.000		90.0	1.8	98	15.5	143.0	4.9	96	24.3	6.2	.7	88	.968
JUL	212.600	6.900	21.400		73.0	1.7	97	15.1	145.0	4.0	97	29.9	4.8	.4	89	.916
AUG	195.800	6.300	8.200		58.0	2.0	96	10.9	129.0	4.7	96	24.3	5.0	.4	90	.883
SEP	186.500	6.220	9.100		110.0	2.6	97	20.0	165.0	5.8	96	29.6	5.7	.5	90	.960
OCT	196.300	6.300	8.900		95.0	1.2	98	18.4	148.0	3.3	97	28.4	6.6	.3	95	1.235
NOV	178.700	6.000	7.200		90.0	1.2	98	15.8	143.0	3.5	97	24.9	6.2	.2	95	1.058
DEC	211.300	6.820	11.600		70.0	6.0	91	13.5	116.0	5.0	95	23.4	4.7	.4	91	.909
TOTAL	2459.500							202.7				331.2				13.084
AVERAGE		6.718			87.1	3.1	96		141.5	5.4	96		6.0	.6	89	
MAXIMUM			21.400													
NO. OF SAMPLES					39	38			91	84			39	207		

DESIGN DATA - Metric

PROJECT: Simcoe

PROJECT NO: 1-0278-71

TREATMENT: Activated Sludge

DESIGN FLOW: 14.692 $10^3 m^3/d$

Raw Sewage Pumping Station
Type: Two identical centrifugal vertical variable speed sewage pumps
Speed: 189.3 l/s at 16.8m TDH
Power: 47.7 kW 1200 RPM motors
Type: Two constant speed pumps
Speed: 126.1 l/s at 16.8 m TDH

Flow Measurement
Type: A meter chamber with a 304.8 mm diameter magnetic flow meter.

Grit Removal
Type: Dorr Detritors
Size: Two 4.3m x 4.3m x 0.46 m

Screening
Type: Two. 0.9m barminutors, model "C"

OLD PLANT

Primary Sedimentation
Size: 15.2m x 6.1m x 2.4m
Volume: 15,240 m^3 tank
Retention: 4.31 hours
Loading: Surface 29.33 $m^3/m^2.d$
Weir 447.00 $m^3/m.d$

Aeration Tanks
Type: One four pass diffused air unit
Size: Eight-3.7m x 15.2m x 2.4m
Volume: 1091.04 m^3
Retention: 9.6 hours
Air Supply: Two Roots-Connersville 501.5 l/s units delivering through holes in pipes and spargers

Secondary Sedimentation
Type: One Dorr
Size: 14.0m (hex) x 2.9m swd tank
Retention: 3.16 hours with 25% return sludge
Loading: Surface-17.69 $m^3/m^2.d$
Weir-82.99 $m^3/m^2.d$

NEW PLANT

Primary Sedimentation
Type: Four circular syphon fed units 13.7m dia. x 3.05 m swd with scum collector & sludge thickener hopper and mechanism.
Loading: Surface - 17.69 $m^3/m^2.d$
Weir - 82.99 $m^3/m.d$

Aeration Tanks
Size: Four tanks each 29.9m x 7.6m x 3.81m swd
Retention: 6.5 hrs
Blowers: Four-rated @ 2716 l/s
Two-rated @ 2297 l/s for a low pressure aeration system.

Secondary Sedimentation
Size: Two Dorr 13.7m dia. x
Retention: 3.4 hours
Loading: Surface - 21.51 $m^3/m^2.d$
Weir - 82.99 $m^3/m.d$
Tanks: Two 18.2 m x 18.2m square tanks.

Digestion

Primary Digesters
Size: One 21.3m dia. x 7.6m swd
Rate: 0.928 $kg/m^3.d$ for 3.5% sludge
Retention: 17.3 days

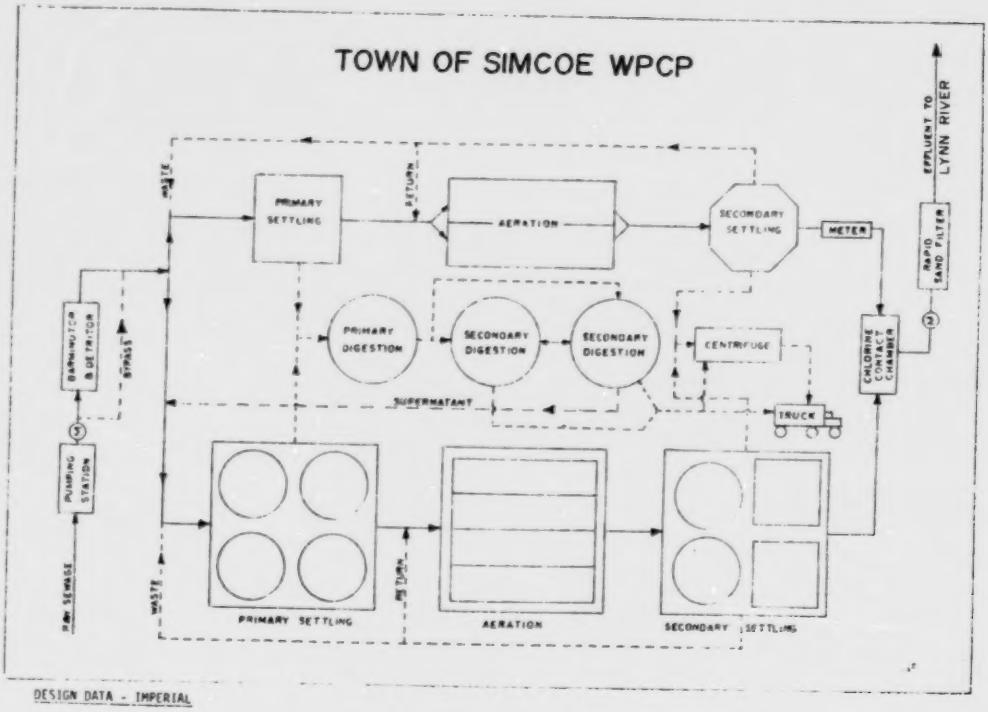
Secondary Digesters
Size: Two 15.2m dia. x 6.1m swd for 56 days storage capacity

Boiler-Centrifuge Building
Type: Two fire tube type boilers
Rate: 680 MBH and 840 MBH
Type: One Kruger 500 KDF centrifuge with sludge holding and chemical tanks.

Chlorination
Type: One chlorine contact chamber
Size: 12.8m x 12.1m x 2.6m swd
Retention: 33 min.
Type: One gas chlorinator (max. capacity 907.2 kg/d with 226.8 kg/d rotameter

Effluents Polishing Filters
Type: One uncovered automatic backwash rapid sand filter (33.5m x 4.9m)
Rate: 0.009 l/s/m^2

Outfall Sewer
0.6m dia. sewer discharging to Lynn River.



DESIGN DATA - IMPERIAL

PROJECT : Simcoe
PROJECT NO. : 1-0278-71
TREATMENT : Activated Sludge
DESIGN FLOW : MIGD 3.232
Old Plant 0.6 MIGD
New Plant 2.6 MIGD

RAW SEWAGE PUMPING STATION
Two identical centrifugal vertical variable speed sewage pumps each rated at 2500 IGPM at 55' TDH. Driven by two 60 HP 1200 RPM motors. Two constant speed pumps each rated at 1666 IGPM at 55' TDH.

FLOW MEASUREMENT
A meter chamber with a 12" diameter magnetic flow meter.

GRIT REMOVAL
Two 14'x14'x1.5' Dorr detritors.

SCREENING
Two 24 inch barminutors, model "C".

OLD PLANT

PRIMARY SEDIMENTATION
One 50'x20'x8' (50,000 gal.) tank
Retention: 4.31 hr.
Loading: Surface 600 gal/sq.ft/day
Weir, 30,000 gal/ft/day

AERATION TANKS
One four pass diffused air unit.
Size: 8 -12'x50'x8' (240,000 gal.)
Retention: 9.6 hr.
Air supplied by two Roots-Connersville 1200 SCFM units delivering through holes in pipes and spargers.

SECONDARY SEDIMENTATION
One Dorr 45' (hex.)x9.5' SWD. tank
Retention: 3.16 hr. with 25% return sludge
Loading: Surface, 360 gal/sq.ft/day
Weir, 4150 gal/ft/day

NEW PLANT

PRIMARY SEDIMENTATION
Four circular syphon fed units 45' diam. x16' SWD, with scum collector and sludge thickener hopper and mechanism.
Loading: Surface, 360 gal/sq.ft./day
Weir, 5570 gal/ft/day

AERATION TANKS
Four tanks each 98'x25'x12.5' SWD
Retention: 6.5 hrs.
Four blowers each rated at 6500 SCFM
Two blowers each rated at 5500 SCFM for a low pressure aeration system.

SECONDARY SEDIMENTATION
Two Dorr 45' diam.x
Retention: 3.4 hr.
Loading: Surface, 440 gal/sq.ft/day
Weir, 5570 gal/ft/day
Two 60'x60' square tanks

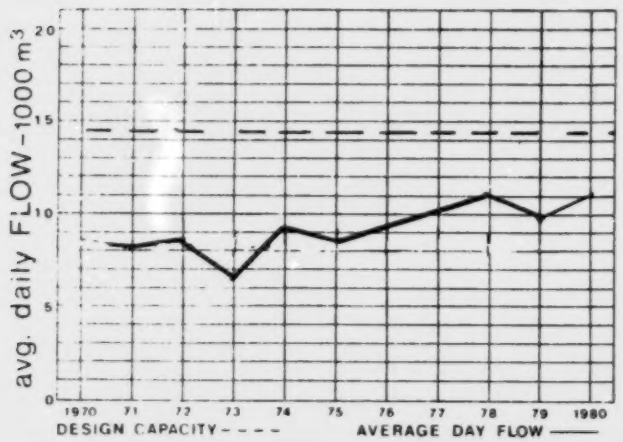
DIGESTION
One 70' diam. 25' SWD primary digester rated at 0.091 lb VSS/cu.ft/day for 3.5% sludge with 17.3 days retention.
Two 50' diam. 20' SWD secondary digesters for 58 days storage capacity

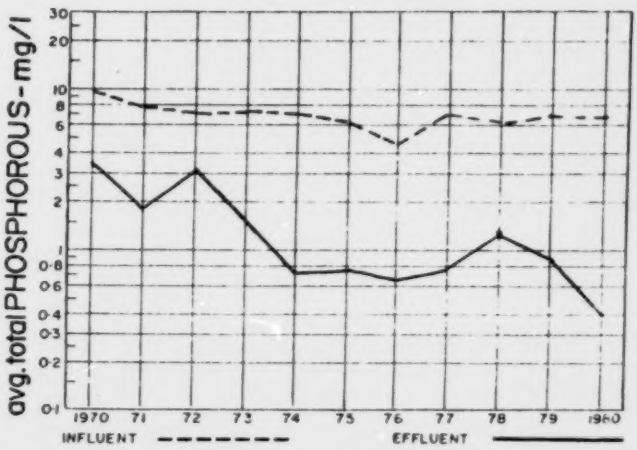
BOILER-CENTRIFUGE BUILDING
Two fire tube type boilers rated at 680 MBH and 840 MBH.
One Kruger 500 KDF centrifuge with sludge holding and chemical tanks.

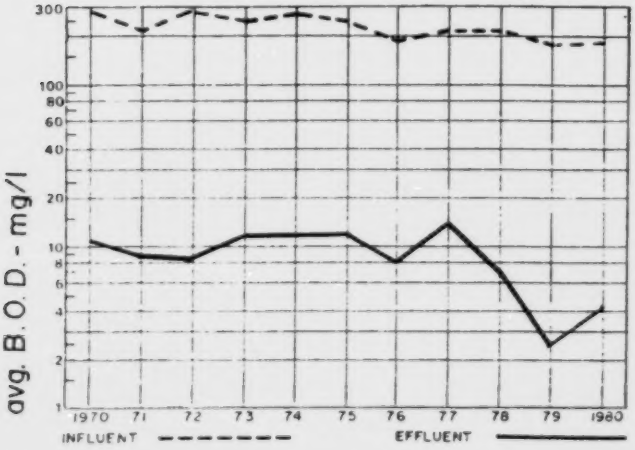
CHLORINATION
One chlorine contact chamber 42'x39.75'x8.5' SWD with 33 min. detention. One gas chlorinator (max. capacity 2000 lb/day) with 500 lb/day rotameter.

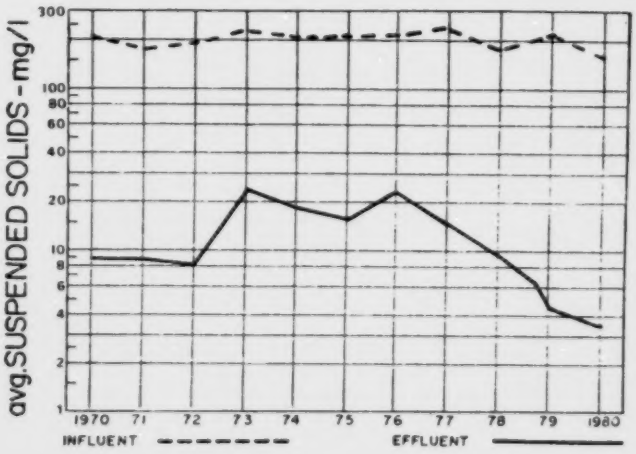
EFFLUENTS POLISHING FILTERS
One uncovered automatic backwash rapid sand filter (110'x16') rated at 1.34 IGPM/sq.ft.

OUTFALL SEWER
A 24" diam. sewer discharging to Lynn River.









ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

SEWAGE TREATMENT - PERFORMANCE REPORT

WORKS NUMBER : 110000677 SIMCOE M P C P (TERTIARY)

MUNICIPALITY : SIMCOE **
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : EFFLUENT FILTRATION
CONVENTIONAL SECONDARY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 14,093
POPULATION SERVED : 12,200
PERCENT SERVED : 86.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 14.692 1000 M3 DESIGN BOD5 : 220.0 MG/L DESIGN SUSP.SOLIDS : 230.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	PEAK RT 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	365.153	11.779	14.223		149.6	3.5	97	53.3	205.9	4.3	97	73.6	6.1	.7	87	1.939
FEB	340.315	11.735	13.577		231.5	5.2	97	77.0	234.5	3.8	98	78.4	8.5	.5	93	2.706
MAR	368.514	11.888	13.650		171.5	4.6	97	61.5	210.5	4.3	97	75.9	6.2	.6	90	2.064
APR	352.146	11.738	13.413		275.0	3.0	98	95.7	208.0	3.7	98	71.9	6.4	.6	90	2.028
MAY	356.131	11.488	13.777		109.0	2.9	97	37.7	210.0	2.6	98	73.8	5.8	.5	91	1.884
JUN	345.473	11.515	13.359		187.5	2.1	98	64.0	151.5	1.5	99	51.8	9.8	.1	98	3.337
JUL	362.083	11.680	13.231		111.0	2.8	97	39.1	185.2	.9	99	66.7	5.6	.5	90	1.832
AUG	350.605	11.310	12.904		227.5	6.7	97	77.4	135.1	2.3	98	46.5	6.1	.2	95	2.044
SEP	350.079	11.669	13.413		135.0	5.2	96	45.4	237.7	2.6	98	82.3	6.3	.1	96	2.139
OCT	399.715	10.959	12.858		230.0	6.8	97	89.2	163.6	1.7	98	64.7	9.9	.1	98	3.893
NOV	306.866	10.229	13.113		200.0	5.0	97	59.8	141.4	8.7	93	40.7	6.2	.3	94	1.792
DEC	267.800	8.639	14.972		192.5	3.1	98	50.7	108.9	8.1	92	36.9	7.1	.3	95	1.832
TOTAL	4164.880							751.2				753.7				27.490
AVERAGE		11.219			185.0	4.2	97		182.7	3.7	97		7.0	.4	93	
MAXIMUM			14.972													
NO. OF SAMPLES					25	25			71	70			71	71		

WASTE STABILIZATION PONDS (LAGOONS)

CONVENTIONAL LAGOON

CONTINUOUS

Ministry of the Environment
Ontario

Southwestern Region
(1)

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

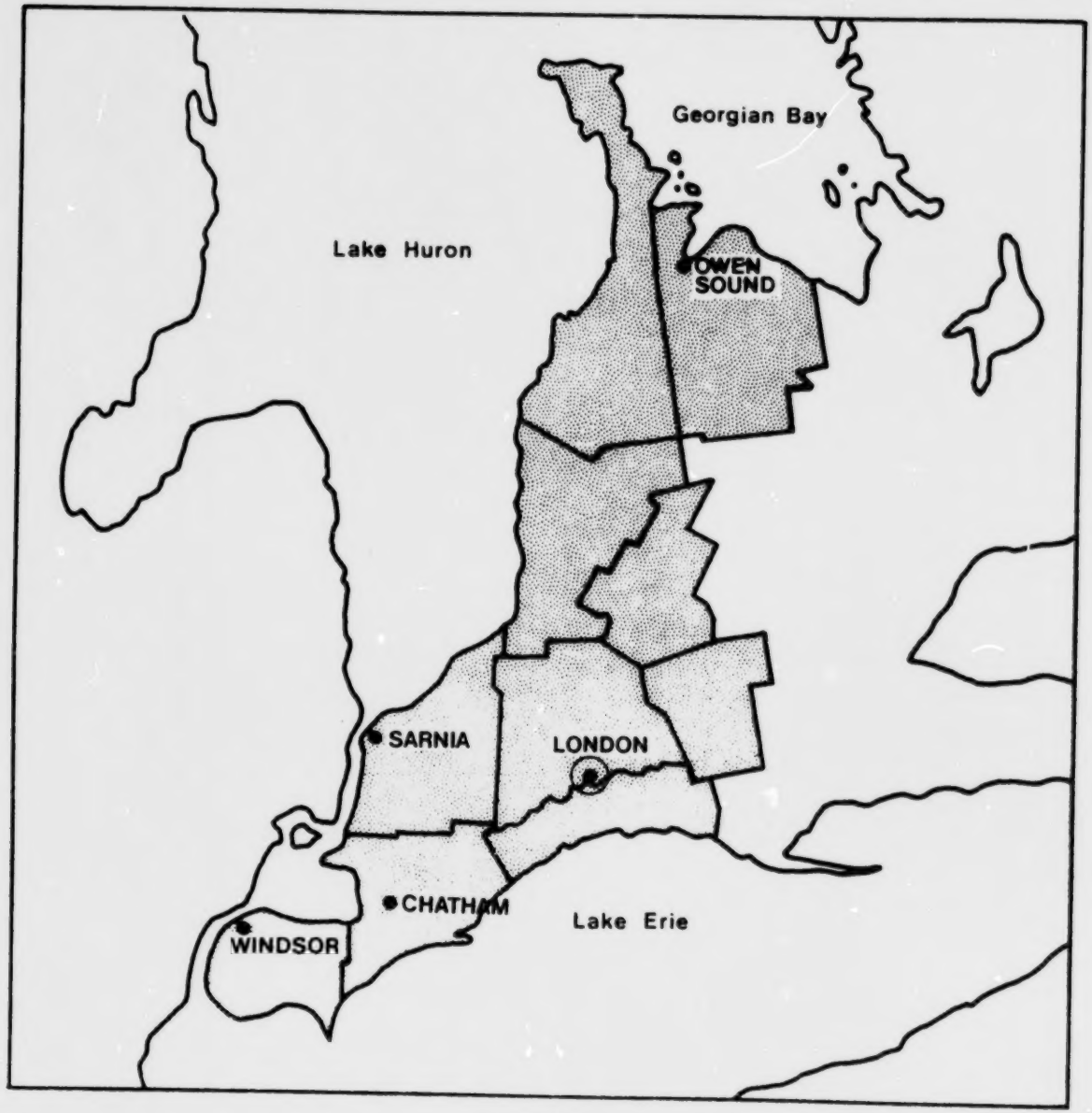
Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Ministry of the Environment
Ontario

Southwestern Region

①



Waste Stabilization Pond

PROJECT : CHESLEY

Cell Acreage : 6 + 5 + 6

Total Acreage : 17.0

Cell area : 2.4 + 2.0 + 2.4 ha

Total hectares: 6.8

Commenced Operation : Oct. 1963

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : 1 & 2 parallel series to #3

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

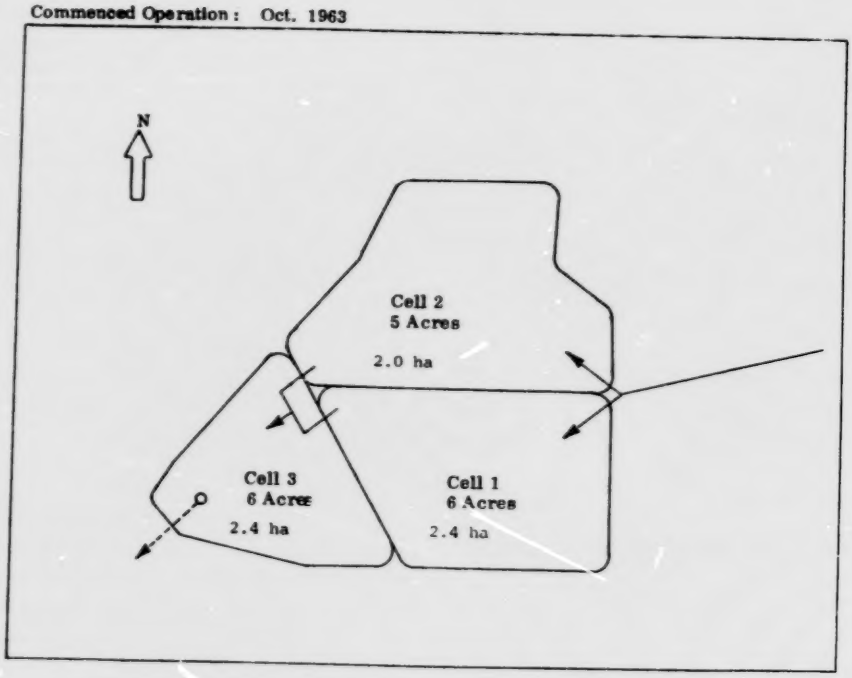
Flow Measurement :

- ☐ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : N/A
Pump 2 : N/A

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000105 CHESLEY LAGOON

MUNICIPALITY : CHESLEY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON
CONTINUOUS

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,836
POPULATION SERVED : 1,835
PERCENT SERVED : 99.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BODS : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	82.215	2.652		*	80.0	11.6	85	5.6	80.0	9.0	88	5.8	4.0	2.4	38	.127
FEB	36.536	1.260		*	110.0	18.0	83	3.3	133.0	3.0	97	4.7	4.5	3.5	22	.037
MAR	76.859	2.479		*	48.0	34.0	29	1.0	36.0	7.0	80	2.2	1.5	2.7	-	-
APR	36.627	1.221		*	80.0	8.8	89	2.6	92.0	8.0	91	3.0	4.5	.6	86	.143
MAY	28.113	.906		*	105.0	11.2	89	2.6	127.0	7.5	94	3.3	1.7	1.8	-	-
JUN	25.279	.843		*	112.0	3.2	97	2.7	73.0	6.5	91	1.6	5.9	2.6	55	.083
JUL	31.396	1.010		*	102.0	3.2	96	3.1	59.8	2.7	95	1.7	5.5	1.5	72	.126
AUG	26.825	.865		*	110.0	5.6	94	2.8	108.3	7.5	93	2.7	3.3	2.5	24	.021
SEP	17.743	.591		*	72.0	4.4	93	1.1	73.7	.6	99	1.2	4.0	2.3	41	.029
OCT	28.939	.934		*	62.0	4.2	93	1.6	49.9	4.8	90	1.3	3.3	1.2	63	.061
NOV	28.207	.940		*	72.0	5.2	92	1.8	39.5	5.3	86	.9	3.6	2.9	18	.019
DEC	42.219	1.360		*	62.0	6.4	89	2.3	34.0	.2	99	1.4	2.1	2.2	-	-
TOTAL	460.958							31.0				30.4				.646
AVERAGE		1.255			84.5	9.6	88		75.5	5.1	93		3.6	2.1	39	
MAXIMUM																
NO. OF SAMPLES					12	12			12	12			12	12		

Waste Stabilization Pond

PROJECT : WIARTON

Cell Acreage : 5.0 + 5.0 + 5.0

Cell area : 2.0 + 2.0 + 2.0 ha

Total Acreage : 15.0

Total hectares : 6.0

Commenced Operation : May 1960

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : #1 & #3 parallel #2 in series

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

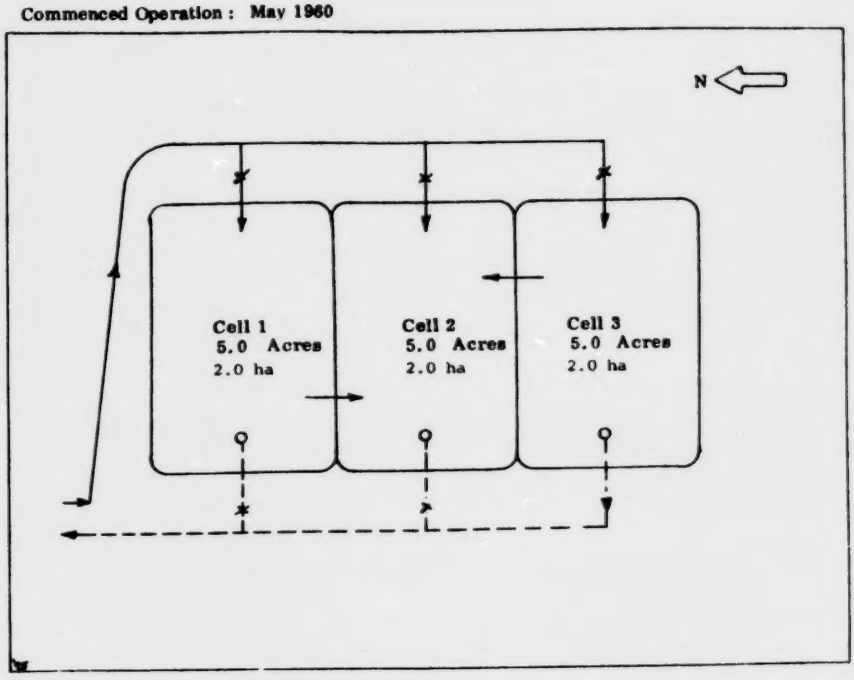
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 327 l gpm 24.8 l/s
Pump 2 : 327 l gpm 24.8 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000819 WIARTON LAGOON

MUNICIPALITY : WIARTON
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON
CONTINUOUS

CURRENT POPULATION : 2,060
POPULATION SERVED : 1,550
PERCENT SERVED : 75.2

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.681 1000 M3 DESIGN BOD5 : 160.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	57.940	1.869	2.130	*	86.0	8.8	89	4.4	143.0	34.0	76	6.3	3.2	1.7	46	.086
FEB	45.860	1.581	1.815	*	92.0	11.2	87	3.7	445.0	27.0	93	19.1	3.3	1.9	42	.064
MAR	56.174	1.812	2.140	*	74.0	18.0	75	3.1	62.0	8.0	87	3.0	3.7	2.5	32	.067
APR	63.295	2.110	2.140	*	44.0	17.2	60	1.6	31.0	15.0	51	1.0	2.8	2.2	21	.038
MAY	54.965	1.773	2.136	*	72.0	29.2	59	2.3	52.0	50.0	3	.1	3.3	1.5	54	.099
JUN	59.250	1.975	2.136	*	28.0	8.0	71	1.1	31.0	18.0	41	.7	2.6	1.7	33	.051
JUL	58.107	1.874	2.136	*	60.0	19.2	68	2.3	69.0	16.5	76	3.0	3.7	2.9	21	.046
AUG	50.905	1.642	2.138	*	56.0	13.6	75	2.1	86.7	38.8	55	2.4	4.4	1.3	70	.158
SEP	49.735	1.658	2.103	*	96.0	15.6	83	3.9	120.0	14.1	88	5.2	4.3	2.6	39	.085
OCT	52.869	1.705	2.122	*	28.0	6.0	78	1.1	30.1	15.6	48	.7	2.2	1.5	31	.037
NOV	56.140	1.871	2.138	*	32.0	4.8	85	1.5	34.2	10.4	69	1.3	1.8	1.1	37	.038
DEC	63.086	2.035	2.138	*	58.0	8.0	86	3.1	81.3	12.2	84	4.3	2.5	1.5	40	.063
TOTAL	668.326							30.9				47.6				.832
AVERAGE		1.825			60.5	13.3	78		98.7	21.6	78		3.1	1.8	40	
MAXIMUM			2.140													
NO. OF SAMPLES					12	12			12	12			10	12		

Waste Stabilization Pond

PROJECT : WINGHAM

Cell Acreage : 15 + 15

Cell area : 6.1 + 6.1 ha

Total Acreage : 30.0

Total hectares : 12.2

342

Commenced Operation : Nov. 1964

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

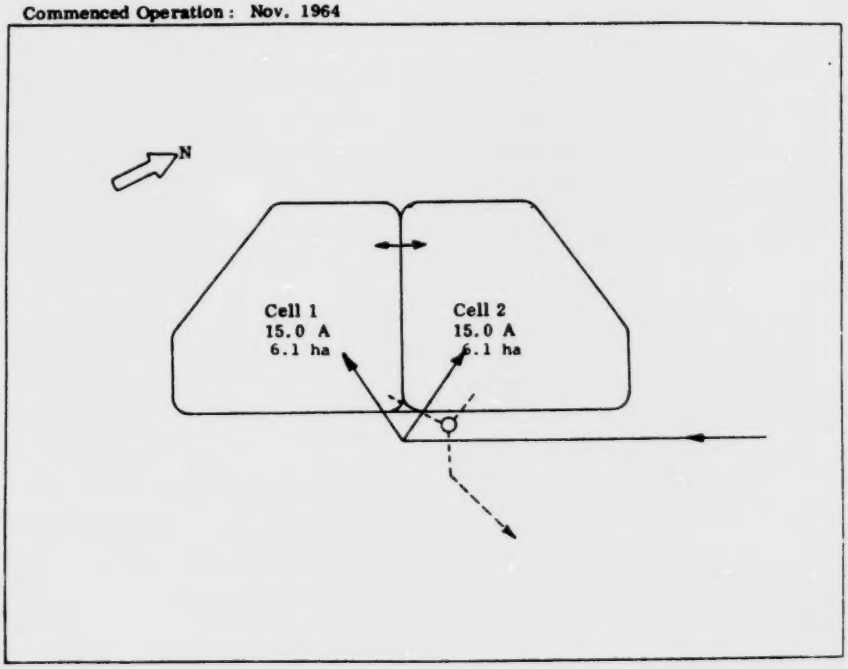
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 900 US gpm 56.8 l/s
Pump 2 : 900 US gpm 56.8 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000828 WINGHAM LAGOON

MUNICIPALITY : WINGHAM
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON
CONTINUOUS

(* SAMPLES NOT COLLECTED)

CURRENT POPULATION : 2,891
POPULATION SERVED : 2,911
PERCENT SERVED : 100.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

(** DATA NOT AVAILABLE)

DESIGN CAPACITY : 1.363 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
					INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/80-DEC/80																
JAN	83.310	2.690	3.470	**	88.0	10.0	88	6.4	432.0	8.5	98	35.2	4.2	2.4	42	.150
FEB	70.010	2.410	3.980	**	36.0	11.0	69	1.7	31.0	7.0	77	1.6	3.1	2.7	12	.028
MAR	78.260	2.524	4.980	**	64.0	17.0	73	3.6	69.0	6.0	91	4.9	4.9	3.0	38	.149
APR	138.743	4.625	8.057	**	76.0	21.8	71	7.5	236.0	68.8	70	23.1	1.4	1.8	-	-
MAY	112.494	3.629	5.349		*	29.0			*	131.0			*	4.6		
JUN	63.140	2.105	NOT RECORDED		*	*			*	*			*	*		
JUL	76.150	2.457	3.790	**	139.0	6.0	95	10.1	112.3	6.3	94	8.0	5.1	2.7	47	.183
AUG	59.320	1.914	2.850	**	139.0	13.3	90	7.4	140.5	27.4	80	6.7	7.2	3.7	48	.208
SEP	44.580	1.486	2.190	**	115.0	10.2	91	4.6	103.2	20.1	80	3.7	4.8	3.2	33	.071
OCT	41.050	1.324	2.110	**	81.0	10.6	86	2.8	65.0	9.6	85	2.2	4.3	2.6	39	.070
NOV	66.380	2.213	3.950	**	93.0	4.7	94	5.8	102.7	5.3	94	6.4	3.0	2.1	30	.060
DEC	86.080	2.777	4.080	**	85.0	12.2	85	6.2	73.6	8.2	88	5.6	3.1	2.2	29	.077
TOTAL	919.517							56.7				97.9				.996
AVERAGE		2.513			91.6	13.2	85		136.5	27.1	80		4.1	2.8	31	
MAXIMUM			8.057													
NO. OF SAMPLES					16	24			16	25			16	25		

Ministry of the Environment
Ontario

West Central Region

②

REGIONAL OFFICE

HAMILTON
119 King St. W.
P.O. BOX 2112
811-521-7640

DISTRICT OFFICES

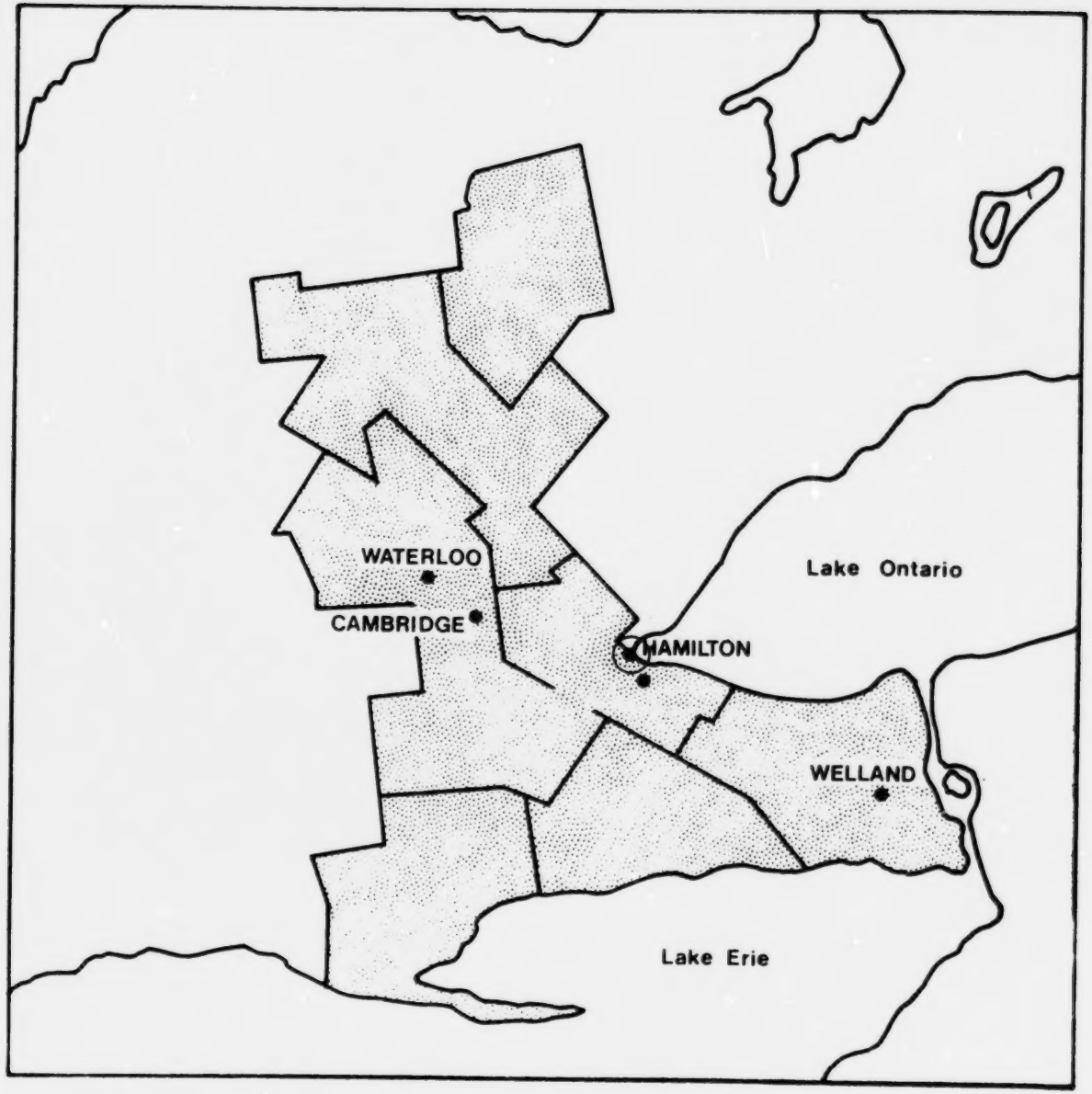
Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

Ministry of the Environment
Ontario

West Central Region

②



Waste Stabilization Pond

PROJECT : SHELBURNE

Cell Acreage : 6.58 + 6.58

Cell area : 2.7 + 2.7 ha

Total Acreage : 13.16

Total hectares: 5.4

Commenced Operation : 1963

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

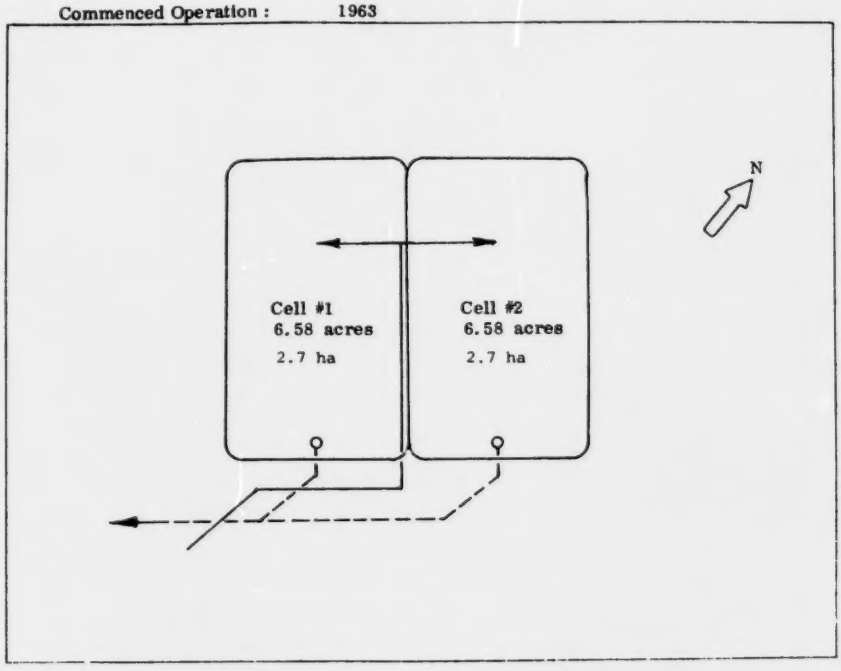
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : N/A
Pump 2 : N/A

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000659 SHELBURNE LAGOON

MUNICIPALITY : SHELBURNE
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON CONTINOUS
CONTINUOUS

CURRENT POPULATION : 3,001
POPULATION SERVED : 4,000
PERCENT SERVED : 133.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.590 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	40.710	1.310		40.710	100.5	23.5	76	3.1	107.5	37.5	65	2.8	5.7	4.0	29	.069
FEB	28.280	.980		28.280	145.0	59.0	59	2.4	130.0	33.0	74	2.7	8.0	5.6	30	.068
MAR	53.400	1.720		53.400	91.0	67.5	25	1.2	123.0	40.0	67	4.4	6.3	5.7	9	.032
APR	75.680	2.520		75.680	45.0	27.0	40	1.3	75.0	28.0	62	3.5	3.5	3.0	14	.038
MAY	56.700	1.800		56.700	70.0	21.5	69	2.7	80.0	50.0	37	1.7	3.6	2.5	30	.062
JUN	41.200	1.370		41.200	96.5	25.5	73	2.9	122.5	30.5	75	3.7	5.6	3.2	42	.099
JUL	54.500	1.760		54.500	88.0	18.0	79	3.8	222.0	26.0	88	10.6	4.7	3.7	21	.055
AUG	59.700	1.900		59.700	230.0	5.0	97	13.4	200.0	15.0	92	11.0	22.0	1.5	93	1.224
SEP	51.000	1.700		51.000	75.0	16.5	78	2.9	117.0	40.0	65	3.9	5.6	2.9	48	.138
OCT	62.000	2.000		62.000	132.5	31.0	76	6.2	227.5	72.5	68	9.6	6.6	2.1	68	.279
NOV	61.500	2.050		61.500	72.0	17.0	76	3.3	105.0	73.0	30	1.9	5.9	2.4	59	.215
DEC	63.100	2.040		63.100	104.0	20.0	80	5.3	273.0	38.0	86	14.8	5.2	3.0	42	.139
TOTAL	647.770			647.77				49.0				71.1				2.418
AVERAGE		1.763			104.1	27.6	73		148.5	40.2	72		6.8	3.3	52	
MAXIMUM				75.680												
NO. OF SAMPLES					22	23			22	23			22	23		

Ministry of the Environment
Ontario

Northeastern Region

⑤

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

Sault Ste. Marie
445 Albert St. E.
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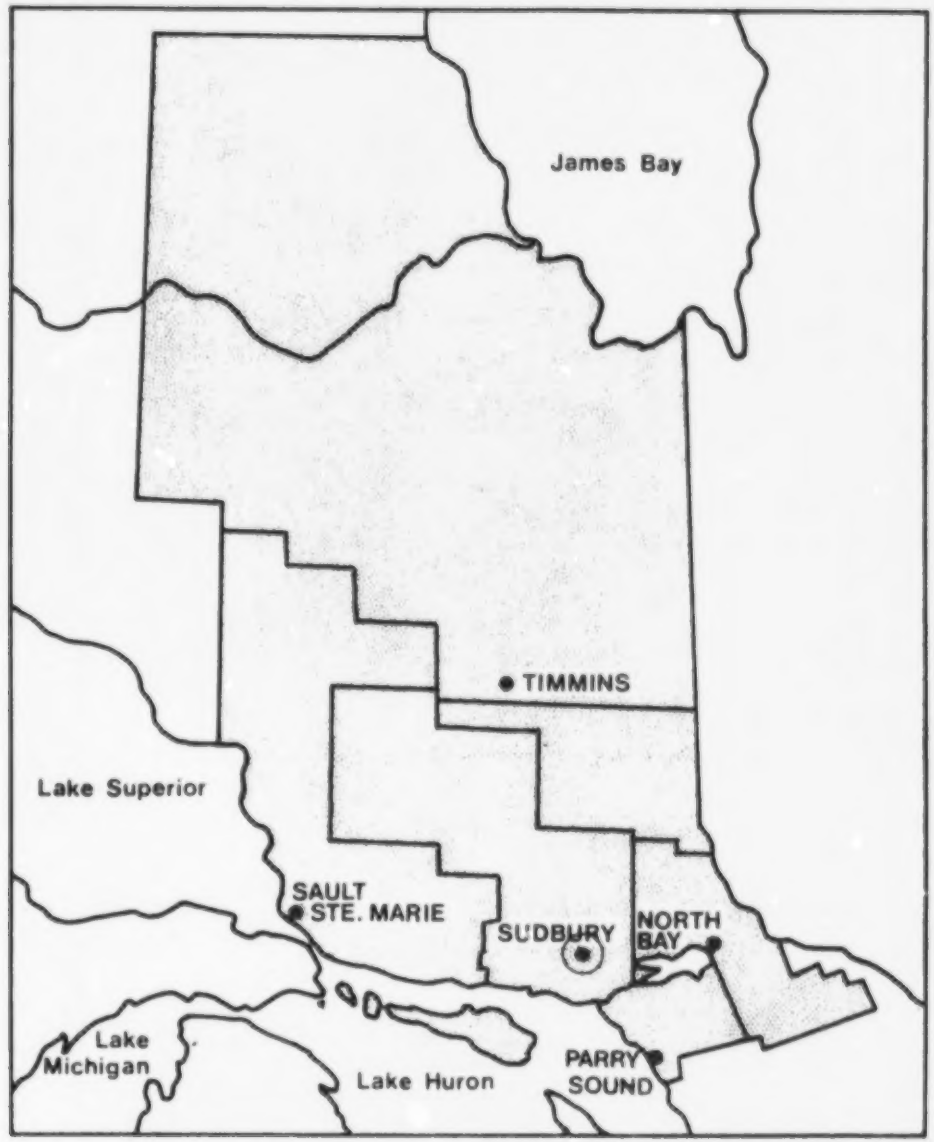
Timmins
83 Algonquin Blvd. W.
705-264-9474

Parry Sound
74 Church St.
705-746-2139

Ministry of the Environment
Ontario

Northeastern Region

⑤



Waste Stabilization Pond

PROJECT : BLACK RIVER MATHESON
(RAMORE lagoon)

350

Cell Acreage : 3.8 Cell area: 1.5 ha

Total Acreage : 3.8 Total hectares: 1.5

Commenced operation: April 1962

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

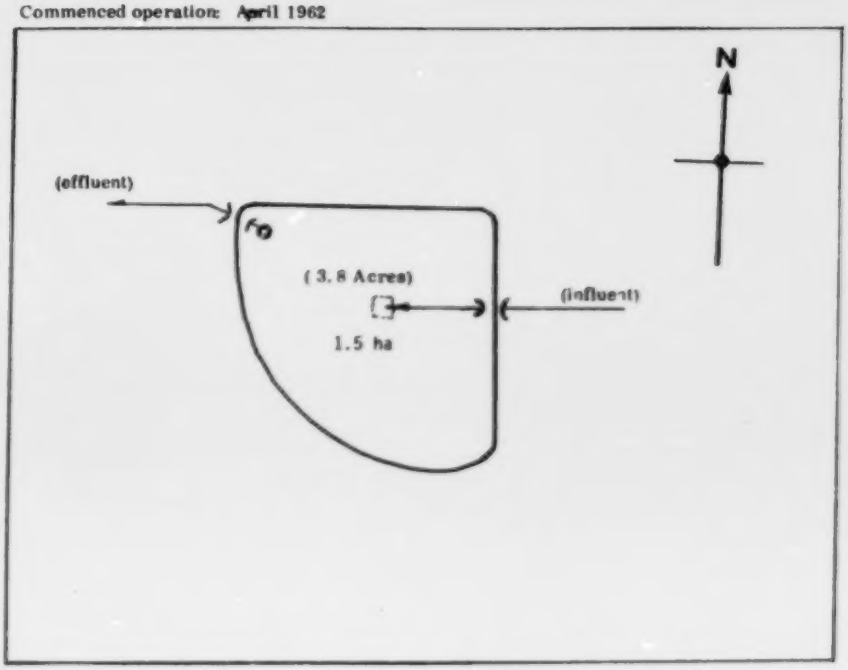
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 120 Igpm 9.1 l/s
Pump 2 : 120 Igpm 9.1 l/s

Total Cap : 130 Igpm 9.1 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001104 RAMORE LAGOON

MUNICIPALITY : BLACK R.MATHESON
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON
CONTINUOUS

CURRENT POPULATION : 3,567
POPULATION SERVED : 320
PERCENT SERVED : 8.9

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.122 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA				—><—BIOCHEMICAL OXYGEN DEMAND—><				—><— SUSPENDED SOLIDS —><				—><— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	3.224	.104		3.224	48.0	*			*	27.5			5.5	4.2	23	
FEB	2.915	.100		2.915	100.0	20.0	80		180.0	30.0	83		6.4	*		
MAR	2.822	.091		2.822	180.0	40.0	77		265.0	40.0	84		11.0	6.3	42	
APR	9.550	.310		20.720	64.0	17.0	73		210.0	13.0	93		2.1	3.0	-	-
MAY	5.410	.180			60.0				60.0				4.1			
JUN	3.990	.130			*				*				*			
JUL	3.278	.109			*				*				*			
AUG	3.760	.120			*				*				*			
SEP	4.600	.150		*	125.0	6.0	95		180.0	5.0	97		4.9	2.6	46	
OCT	5.650	.180		13.000	32.5	6.5	80		80.0	6.0	92		*	2.6		
NOV	3.820	.130			330.0				685.0				*			
DEC	3.490	.110			140.0				95.0				9.1			
TOTAL	52.509			42.681				5.4				10.5				0.8
AVERAGE		.143			119.9	17.9	85		219.3	20.2	90		6.1	3.7	39	
MAXIMUM				20.720												
NO. OF SAMPLES					11	11			9	13			8	12		

Waste Stabilization Pond

PROJECT : ENGLEHART

Cell Acreage : 10 + 10

Cell area: 4.0 + 4.0 ha

Total Acreage : 20

Total hectares: 8.0

Commenced Operation : -

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- ■ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

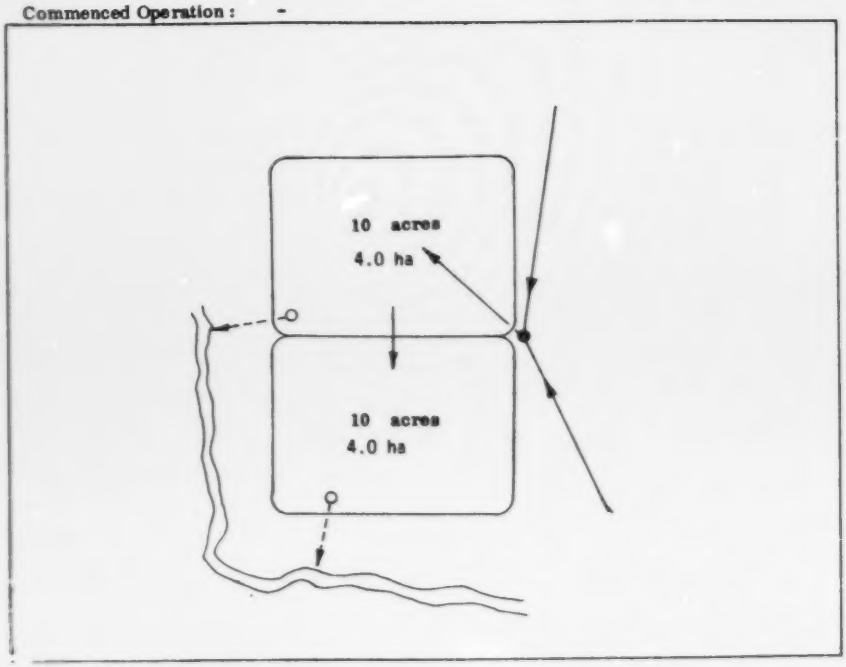
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 350 lgpm 26.5 l/s
Pump 2 : 350 lgpm 26.5 l/s

Total Cap : 350 lgpm 26.5 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000187 ENGLEHART LAGOON

MUNICIPALITY : ENGLEHART
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON
CONTINUOUS

CURRENT POPULATION : 1,689
POPULATION SERVED : 1,706
PERCENT SERVED : 101.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
					INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/80-DEC/80																
JAN	28.700	.930		28.700	53.0	8.5	83	1.2	90.0	20.0	77	2.0	4.9	2.3	53	.075
FEB	28.300	1.000		28.300	120.0	15.5	87	2.9	127.5	20.0	84	3.0	6.3	3.8	39	.071
MAR	41.000	1.330		41.000	85.0	32.0	62	2.1	155.0	17.5	88	5.6	6.4	4.1	35	.092
APR	64.000	2.130		64.000	27.8	20.0	28	.4	248.3	18.0	92	14.7	2.0	2.4	-	-
MAY	55.500	1.780		55.500	103.0	9.0	91	5.2	415.0	17.0	95	22.0	5.2	1.0	80	.232
JUN	42.000	1.400		42.000	90.0	2.5	97	3.6	290.0	6.5	97	11.9	4.5	1.7	62	.118
JUL	37.600	1.200		37.600	31.6	3.4	89	1.0	63.3	5.0	92	2.1	7.4	1.4	81	.226
AUG	33.110	1.060		33.110	90.0	2.0	97	2.9	153.0	8.0	94	4.8	5.0	2.1	58	.096
SEP	39.000	1.300		39.000	76.0	2.5	96	2.8	157.5	.5	99	6.1	4.4	1.6	64	.111
OCT	54.800	1.760		54.800	36.6	2.8	92	1.8	68.3	5.0	92	3.4	2.3	1.2	45	.057
NOV	36.000	1.200		36.000	36.0	3.5	90	1.1	62.5	5.0	92	2.0	2.2	1.6	27	.022
DEC	32.640	1.050		32.640	58.0	18.0	68	1.3	83.0	30.0	63	1.7		2.8		
TOTAL	492.670			492.670				26.9				79.8				1.100
AVERAGE		1.345			67.2	9.9	85		159.4	12.7	92		4.6	2.1	52	
MAXIMUM				64.000												
NO. OF SAMPLES					26	25			26	25			24	25		

Waste Stabilization Pond

PROJECT : LITTLE CURRENT

Cell Acreage : 10 Cell area: 4.0 ha

Total Acreage : 10 Total hectares: 4.0

Commenced Operation: Jan. 1965

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

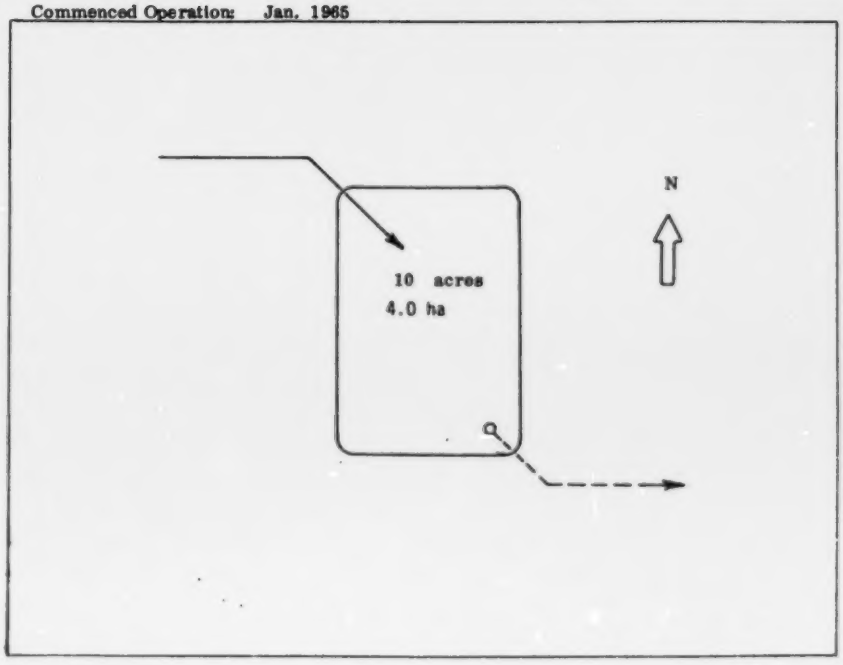
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 434 I gpm 32.9 l/s
Pump 2 : 434 I gpm 32.9 l/s

Total Cap : 434 I gpm 32.9 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000392 LITTLE CURRENT LAGOON

MUNICIPALITY : LITTLE CURRENT
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON
CONTINUOUS

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,517
POPULATION SERVED : 500
PERCENT SERVED : 32.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	16.657	.537	.540	*	*	*			*	*			*	*		
FEB	13.993	.500		*	*	*			*	*			*	*		
MAR	20.152	.650		*	*	*			*	*			*	*		
APR	22.444	.748		*	*	*			*	*			*	*		
MAY	16.269	.525		*	*	*			*	*			*	*		
JUN	14.565	.486		*	*	*			*	*			*	*		
JUL	17.718	.572		*	*	*			*	*			*	*		
AUG	15.599	.503	.611	*	40.0	18.0	55		45.0	20.0	55		6.2	*		
SEP	13.790	.460	.640	13.790	37.0	12.0	67		42.0	35.0	16		3.3	5.7	-	-
OCT	15.070	.486	.750	15.070	*	*			*	*			*	*		
NOV	19.500	.650	1.050	*	*	*			*	*			*	*		
DEC	15.200	.490	.730	15.200	78.0	12.0	84		90.0	35.0	61		5.1	4.7	7	
TOTAL	200.957			44.060				7.6				5.8				0
AVERAGE		.551			51.6	14.0	72		59.0	30.0	49		4.8	5.2	-	
MAXIMUM			1.050	15.200												
NO. OF SAMPLES					5	6			5	6			5	4		

Waste Stabilization Pond

PROJECT : NEW LISKEARD

Cell Acreage : 10.1 + 10.0 (6 New Liskeard + 4 Dymond Twp) + 10.1 + 12.8 + 20.7

Total Acreage : 63.7 (New Liskeard)

Cell area: 4.1 + 4.0 (2.4 New Liskeard + 1.6 Dymond Twp.) + 4.1 + 5.2 + 8.4 ha

Total hectares: 25.8

Commenced Operation : 1964

Expansion to 63.7 Acres : August 1973

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- □ Continuous
- □ Annual
- ■ Other : Continuous with Spring drawdown

Phosphorus Removal:

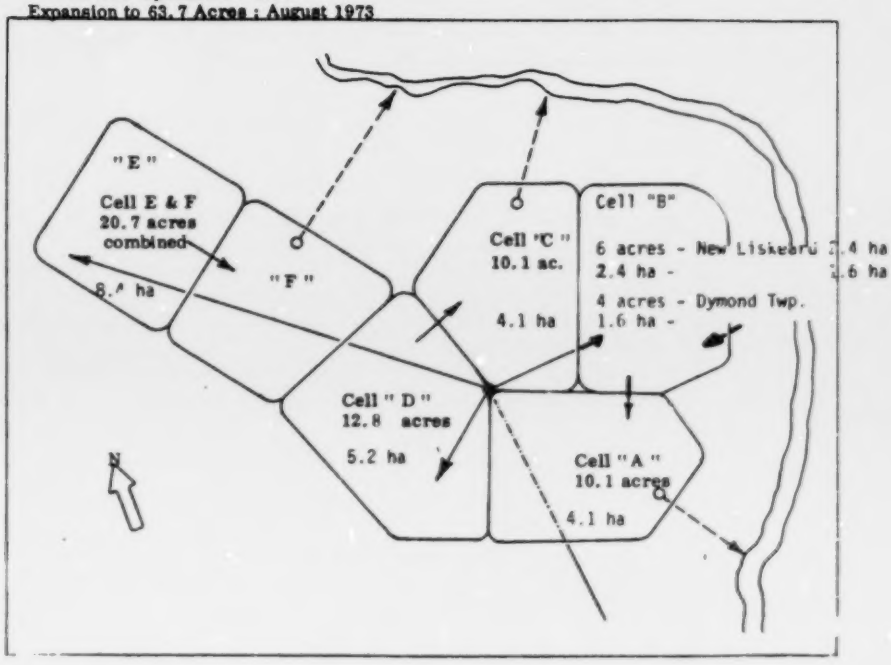
- □ Batch
- □ Continuous
- ■ None

Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 :	1280 I gpm	96.9 l/s
Pump 2 :	1160 I gpm	87.8 l/s
Total Cap :	1630 I gpm	123.4 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000515 NEW LISKEARD LAGOON

MUNICIPALITY : NEW LISKEARD
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON
CONTINUOUS

CURRENT POPULATION : 5,496
POPULATION SERVED : 5,489
PERCENT SERVED : 99.8

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.895 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	94.262	3.041	4.189	94.262	315.0	27.5	91	27.1	218.0	31.5	85	17.5	7.3	*		
FEB	91.404	3.152	3.840	91.404	124.5	55.5	55	6.3	147.5	14.5	90	12.1	6.7	*		
MAR	117.462	3.789	7.822	117.462	112.5	69.8	37	5.0	169.0	13.2	92	18.3	6.4	*		
APR	228.080	7.603	10.834	228.080	564.5	28.8	94	122.1	321.0	13.2	95	70.2	5.8	*		
MAY	186.538	6.017	10.448	186.538	93.0	18.3	80	13.9	136.0	33.2	75	19.1	8.6	*		
JUN	136.835	4.561	5.586	136.835	130.0	9.6	92	16.4	129.0	27.4	78	13.9	4.8	*		
JUL	147.605	4.761	6.323	147.605	121.0	8.8	92	16.5	134.0	22.0	83	16.5	6.0	*		
AUG	139.286	4.493	8.029	139.286	90.4	8.8	90	11.3	117.1	27.0	76	12.5	5.5	*		
SEP	132.305	4.410	7.331	132.305	61.4	12.1	80	6.5	99.8	19.5	80	10.6	4.2	*		
OCT	151.504	4.887	6.982	151.504	64.5	14.4	77	7.5	102.6	33.7	67	10.4	3.8	*		
NOV	122.529	4.084	4.887	122.529	72.8	18.7	74	6.6	114.0	34.0	70	9.8	4.1	*		
DEC	106.476	3.435	3.840	106.476	129.0	*			175.0	*			7.3	*		
TOTAL	1654.286			1654.286				239.6				211.2				
AVERAGE		4.519			156.5	24.7	84		155.2	24.4	84		5.8			
MAXIMUM			10.834	228.080												
NO. OF SAMPLES					24				24				24			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110004021 — NEW LISKEARD LAGOON CELLS A-B — MUNICIPALITY : NEW LISKEARD (CELL A-B)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON CONTINOUS SERIES OPERATION — CURRENT POPULATION : 5,441; POPULATION SERVED : 0; PERCENT SERVED : 0.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.954 1000 M3 — DESIGN BOD5 : — DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN					17.0				9.5				5.3			
FEB					55.5				14.5				6.7			
MAR					79.0				10.5				6.6			
APR					16.7				9.5				3.5			
MAY					18.0				36.5				3.1			
JUN					10.7				42.3				3.1			
JUL					13.0				35.0				2.9			
AUG					5.5				13.5				3.7			
SEP					9.6				18.5				3.9			
OCT					13.5				42.5				3.9			
NOV					30.0				45.0				3.9			
DEC					-				-				-			
TOTAL																
AVERAGE					23.6				25.1				3.7			
MAXIMUM																
NO. OF SAMPLES					23				23				23			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110003200 — NEW LISKEARD LAGOON CELL C-D — MUNICIPALITY : NEW LISKEARD (CELL C-D)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON CONTINOUS SERIES OPERATION — CURRENT POPULATION : 5,441; POPULATION SERVED : 5,250; PERCENT SERVED : 96.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.954 1000 M3 — DESIGN BOD5 : — DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN					36.0				9.5				6.3			
FEB					88.0				13.0				7.1			
MAR					84.0				12.0				7.6			
APR					27.0				14.0				3.6			
MAY					20.0				34.0				2.7			
JUN					5.0				6.0				3.6			
JUL					9.0				6.0				3.6			
AUG					8.0				11.0				3.9			
SEP					11.0				40.0				3.6			
OCT					19.0				28.0				3.6			
NOV					29.0				46.0				4.1			
DEC					23.0				45.0				3.6			
TOTAL																
AVERAGE					26.6				22.3				4.3			
MAXIMUM																
NO. OF SAMPLES					13				12				13			

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT — REPORT DATE: 26 DEC 81

WORKS NUMBER : 110003099 — NEW LISKEARD LAGOON CELLS E-F — MUNICIPALITY : NEW LISKEARD (CELL E-F)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON CONTINOUS SERIES OPERATION — CURRENT POPULATION : 5,441; POPULATION SERVED : 0; PERCENT SERVED : 0.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.954 1000 M3 — DESIGN BOD5 : — DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN					27.0				31.5				5.4			
FEB					42.0				35.0				6.4			
MAR					46.0				17.0				6.5			
APR					27.0				15.0				3.3			
MAY					18.0				29.0				2.9			
JUN					13.0				34.0				3.4			
JUL					9.0				30.0				3.7			
AUG					9.0				27.0				3.9			
SEP					7.0				12.0				3.7			
OCT					8.0				12.0				4.2			
NOV					14.0				12.0				3.8			
DEC					-											
TOTAL																
AVERAGE					20.1				23.4				4.3			
MAXIMUM																
NO. OF SAMPLES					23				22				23			

Waste Stabilization Pond

PROJFCT : POWASSAN

Cell Acreage : 7 Cell area: 12.8 ha

Total Acreage : 7 Total hectares: 2.8

Commenced Operation : 1962

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

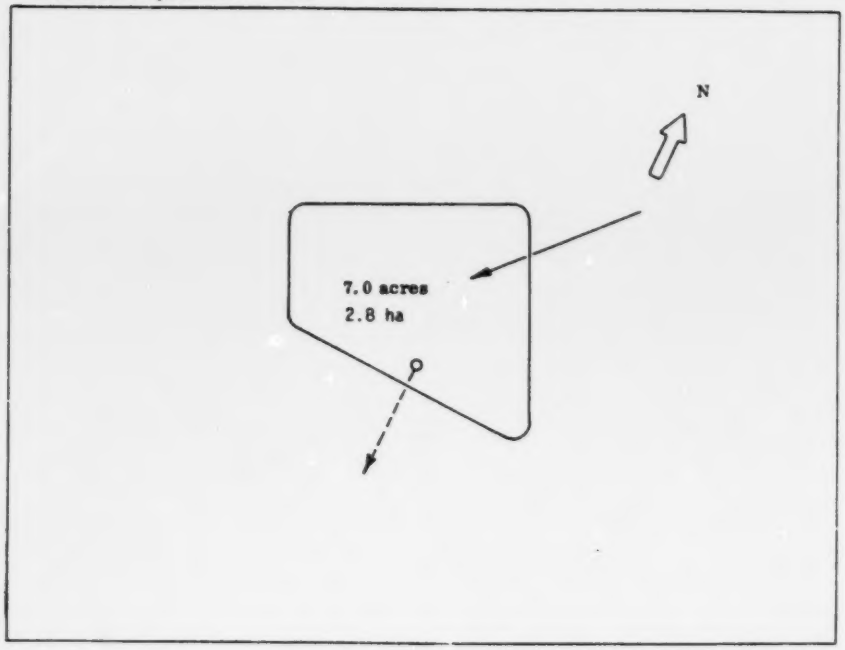
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 240 I gpm 18.1 l/s
Pump 2 : 240 I gpm 18.1 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000613 POWASSAN LAGOON

MUNICIPALITY : POWASSAN
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON CONTINOUS PHOSPHORUS REMOVAL CONTINUOUS

(*DATA NOT AVAILABLE)

CURRENT POPULATION : 1,215
POPULATION SERVED : 1,200
PERCENT SERVED : 98.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.318 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	12.643	.408	.932	12.643	75.0	25.5	66	.6	108.0	22.5	79	1.0	5.4	4.3	20	.014
FEB	7.908	.282	.360	7.908	135.0	40.0	70	.7	285.0	20.0	92	2.0	13.0	4.7	63	.066
MAR	20.401	.658	1.525	20.401	102.0	58.0	43	.8	145.0	20.0	86	2.5	7.0	4.8	31	.045
APR	26.129	.871	1.527	26.129	36.0	16.0	55	.5	105.0	30.0	71	1.9	2.4	3.1	-	-
MAY	17.680	.570	.870	17.680	*	*			*	*			*	*		
JUN	*			*	43.0	3.0	93		75.0	5.0	93		3.4	2.5	26	
JUL	20.162	.650	1.420	20.162	95.0	15.0	84	1.6	135.0	35.0	74	2.0	*	*		
AUG	19.125	.617	1.652	19.125	65.0	15.0	76	.9	100.0	20.0	80	1.5	6.0	2.5	58	.067
SEP	17.782	.593	1.342	17.782	84.0	22.0	73	1.1	110.0	30.0	72	1.4	6.2	3.1	50	.055
OCT	26.590	.860		26.590	92.5	16.0	82	2.0	92.5	17.0	81	2.0	17.0	2.0	88	.399
NOV	19.607	.654	.897	19.607	125.0	*			40.0	22.5	43	.3	29.0	2.6	91	.518
DEC	19.618	.633	.635	19.618	110.5	*			295.0	*			7.6	3.0	60	.090
TOTAL				207.645				8.5				15.0				1.254
AVERAGE		.618			87.5	23.3	73		135.5	22.2	83		9.7	3.2	66	
MAXIMUM			1.652	26.590												
NO. OF SAMPLES					13	8			13	10			12	10		

CONVENTIONAL LAGOON

SEASONAL

Ministry of the Environment
Ontario

Southwestern Region
(1)

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Ministry of the Environment
Ontario

Southwestern Region

①

Waste Stabilization Pond

PROJECT : AYLMER

Cell Acreage : 17.7 + 20.5 + 16.0 + 17.7 Cell Area: 7.2 + 8.3 + 6.5 + 7.2 ha

Total Acreage : 71.9 Total hectares: 29.1

Commenced Operation 1961

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

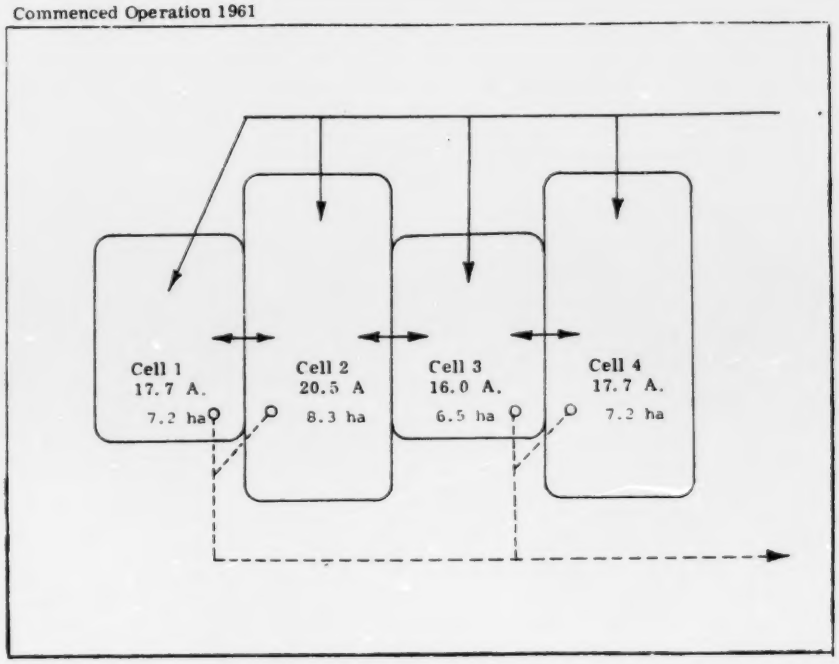
Flow Measurement :

- □ Flow Meter
- □ Integrator (N/A)
- □ Pump Timer NO METER

Pumping Station

Pump 1 : 1440 I gpm 109.0 l/s
Pump 2 : 1440 I gpm 109.0 l/s

Total Cap : N/A



Significant Industries : Dairy Tabalo

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000891 AYLMER LAGOON

MUNICIPALITY : AYLMER
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 5,207
POPULATION SERVED : 5,207
PERCENT SERVED : 100.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.454 1000 M3 DESIGN BOD5 : 266.0 MG/L DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	132.100	4.261	7.800	*	267.5	21.7	91		244.5	17.8	92		20.3	3.9	80	
FEB	78.600	2.807	3.250	*	119.0	15.6	86		79.0	19.4	75		8.9	4.9	44	
MAR	145.600	4.853	14.750	*	146.5	20.0	86		152.5	19.0	87		8.5	6.1	28	
APR	163.100	5.437	12.300	*	111.0	20.7	81		264.5	50.8	80		12.6	4.1	67	
MAY	119.900	3.996	5.200	*	77.0	8.9	88		82.5	17.2	79		9.0	1.6	82	
JUN	124.900	4.029	6.400		200.0				290.0				25.7			
JUL	117.500	3.672	9.050		284.0				184.5				13.1			
AUG	115.800	4.136	6.650	*	131.0	2.8	97		112.2	4.0	96		10.7	.7	92	
SEP	126.500	3.833	4.750	*	142.0	7.5	94		84.7	13.2	84		11.0	1.3	87	
OCT	126.100	4.203	6.067	*	133.6	4.9	96		77.9	16.9	78		13.5	1.3	90	
NOV	96.100	3.100	6.500	*	174.5	6.3	96		63.7	15.5	75		7.6	.8	88	
DEC	133.000	4.433	9.350	*	150.0	17.8	88		61.5	40.3	34		5.9	1.8	69	
TOTAL	1479.200							220.0				177.5				14.2
AVERAGE		4.063			161.3	12.6	92		141.4	21.4	84		12.2	2.6	78	
MAXIMUM			14.750													
NO. OF SAMPLES					25	53			25	53			25	53		

Waste Stabilization Pond

PROJECT : BELMONT

Cell Acreage : 8.1 + 8.1

Total Acreage : 16.2

Cell area : 3.3 + 3.3 ha

Total hectares : 6.6

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

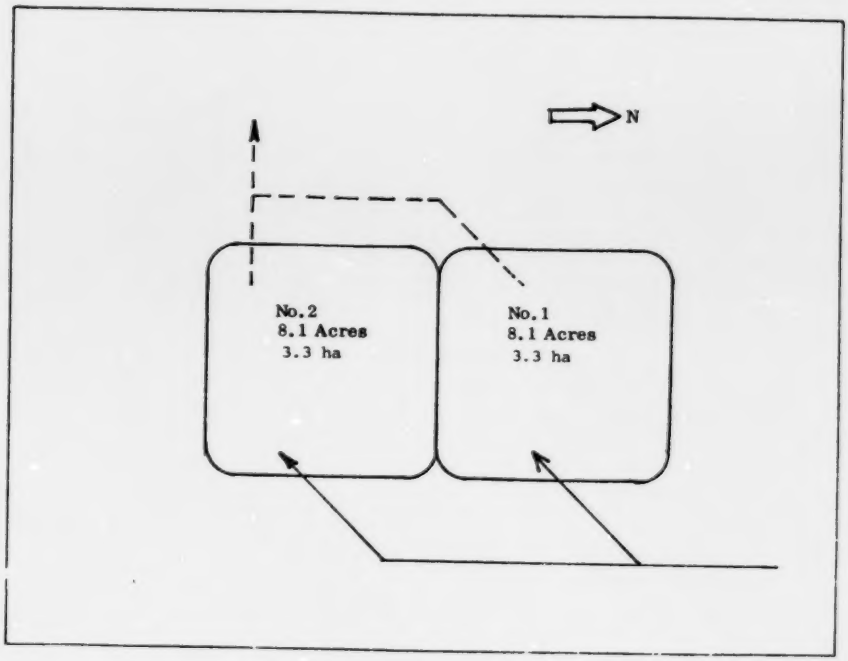
- ■ Batch
- ☐ Continuous
- ☐ None

Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 344 Igpm 26.0 l/s
Pump 2 : 100 Igpm 7.6 l/s
(Washburn St.)
Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002032 BELMONT LAGOON

MUNICIPALITY : BELMONT
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 805
POPULATION SERVED : 836
PERCENT SERVED : 103.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.554 1000 M3 DESIGN BOD5 : 290.0 MG/L DESIGN SUSP.SOLIDS :

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	7.500	.243	.500		119.5				36.0				10.1			
FEB	5.300	.189	.233		177.5				158.0				12.2			
MAR	11.100	.370	.733		141.0				183.5				7.5			
APR	10.400	.347	.900	*	132.0	1.7	98		117.0	4.3	96		10.9	*	99	
MAY	7.900	.263	.950	*	175.0	2.6	98		64.1	4.7	92		12.5	.1	98	
JUN	8.800	.284	1.150	*	163.5				248.0				14.1			
JUL	11.300	.350	1.650	*	180.0				212.5				18.9			
AUG	6.300	.225	.500		172.5				323.0				11.1			
SEP	7.200	.218	.467		157.3				146.3				11.2			
OCT	9.500	.317	.750	*	123.3	1.4	98		95.3	4.8	94		7.7	.1	97	
NOV	5.800	.187	.300		187.5				132.0				10.2			
DEC	9.200	.307	.725		90.0				123.0				5.9			
TOTAL	100.300							15.0				14.9				1.1
AVERAGE		.275			151.5	1.9	98		153.2	4.6	96		11.0	.1	98	
MAXIMUM			1.650													
NO. OF SAMPLES					25	9			25	9			25	9		

Waste Stabilization Pond

PROJECT : DUNDALK

Cell Acreage : 8 + 8

Total Acreage : 16

Cell area : 3.2 + 3.2 ha

Total hectares: 6.4

Commenced Operation: Dec. 1973

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

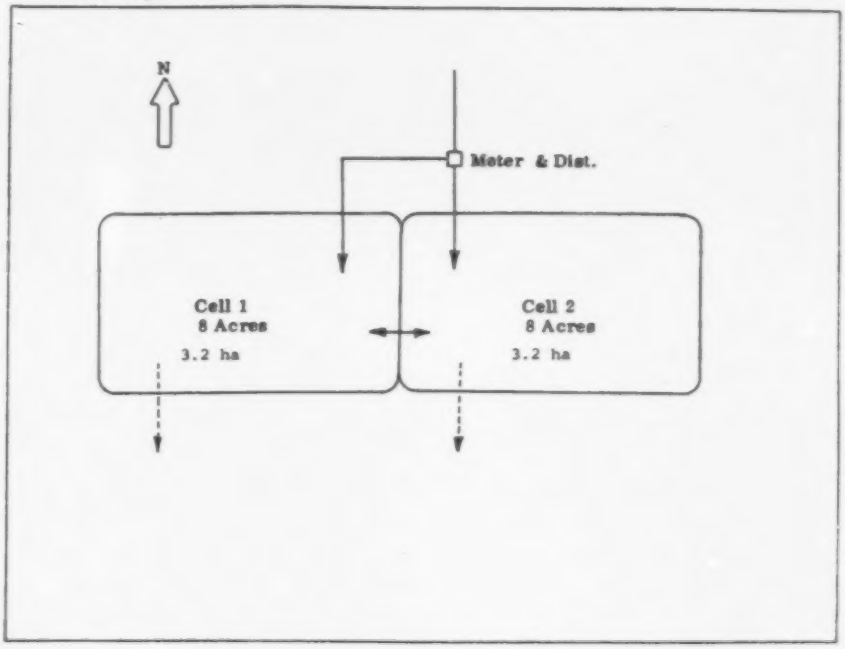
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 : (GRAVITY FLOW)

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001471 DUNDALK LAGOON

MUNICIPALITY : DUNDALK
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,234
POPULATION SERVED : 1,100
PERCENT SERVED : 89.1

(* NO SAMPLES ANALYZED)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

(** DATA NOT AVAILABLE)

DESIGN CAPACITY : 0.650 1000 M3 DESIGN BOD5 : 190.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	21.990	.710		**	50.0				172.0				4.7			
FEB	15.180	.520	FLOW	**	90.0				110.0				5.2			
MAR	28.190	.910	NOT	**	80.0				48.0				4.4			
APR	35.140	1.170	RECORDED	**	*				*				*			
MAY	17.050	.550	DAILY	**	116.0	12.2	89		85.0	35.1	58		5.2	.5	90	
JUN	11.160	.372		**	*				*				*			
JUL	24.400	.781		**	*				*				*			
AUG	19.540	.630		**	*				*				*			
SEP	20.390	.679		**	124.0				89.8				5.0			
OCT	25.070	.810		**	76.0	3.5	95		62.4	3.7	94		3.4	.5	84	
NOV	22.580	.752		**	70.0	4.5	93		55.7	4.8	91		6.0	.4	93	
DEC	20.980	.677		**	*				*				*			
TOTAL	261.670							20.9				19.4				1.1
AVERAGE		.714			86.6	6.7	92		88.9	14.5	83		4.8	.4	90	
MAXIMUM																
NO. OF SAMPLES					7	16			7	16			7	16		

Waste Stabilization Pond

PROJECT : DUTTON

Cell Acreage : 10

Cell area: 4.0 ha

Total Acreage : 10

Total hectares : 4.0

Commenced Operation : Nov. 1972

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

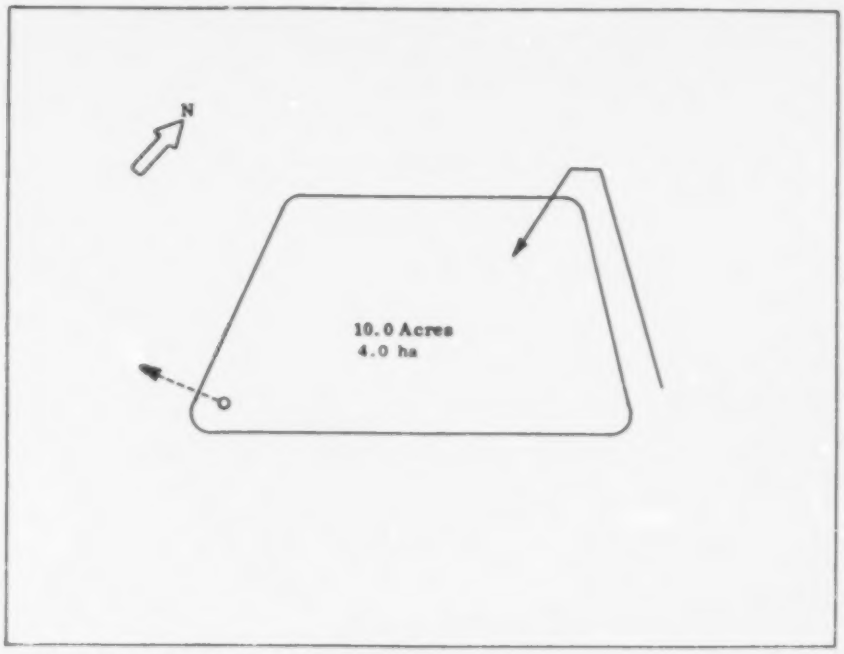
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 350 I gpm 26.5 l/s
Pump 2 : 350 I gpm 26.5 l/s

Total Cap : 350 I gpm 26.5 l/s



Signifigant Industries: Laundromat, Creamery

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001266 DUTTON LAGOON

MUNICIPALITY : DUTTON
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,084
POPULATION SERVED : 1,034
PERCENT SERVED : 95.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.336 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	10.486	.338	.398		140.0				120.0				9.2			
FEB	7.402	.255	.350		112.0				150.0				8.5			
MAR	15.651	.504	2.683		135.0				177.0				9.7			
APR	11.134	.371	.526		74.0				97.0				5.2			
MAY	12.065	.389	.446	49.373	190.0	14.5	92		124.0	28.8	76		13.9	.4	96	
JUN	10.473	.349	.366		165.0				202.0				11.1			
JUL	11.068	.357	.382		22.0				33.6				3.9			
AUG	12.720	.410	.613		205.0				141.8				11.2			
SEP	10.864	.362	.390		220.0				124.3				10.7			
OCT	11.172	.372	.406		124.0				78.2				7.4			
NOV	12.465	.416	.470	555.072	175.0	13.1	92		112.8	28.1	75		11.3	.5	95	
DEC	13.270	.428	.470		175.0				133.8				8.2			
TOTAL	138.770			604.445				18.2				13.9				1.2
AVERAGE		.379			144.7	13.8	90		124.5	28.4	77		9.1	.4	94	
MAXIMUM			2.683	555.072												
NO. OF SAMPLES					13	13			13	13			13	12		

Waste Stabilization Pond

PROJECT : EAST ZORRA - TAVISTOCK TWP.
(TAVISTOCK)

Cell Acreage : 15.0 + 17.0 Cell area: 6.1 + 6.9 ha

Total Acreage : 32.0 Total hectares: 13.0

Commenced Operation : Nov. 1962

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

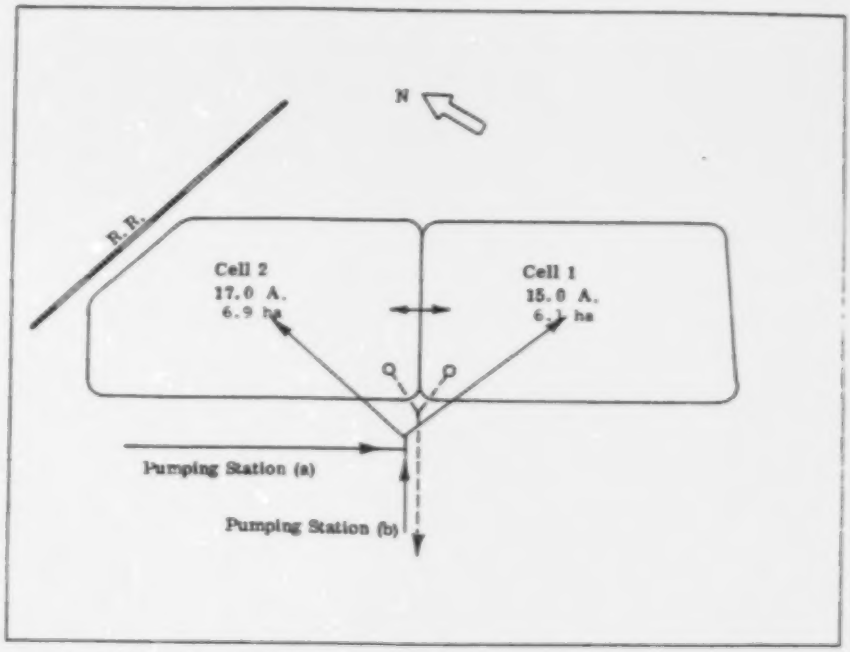
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Stations:

a) Pump 1: 417 Igpm 31.6 l/s
2: 417 Igpm 31.6 l/s
b) Pump 1: 417 Igpm 31.6 l/s
2: 417 Igpm 31.6 l/s

Total Cap: N/A



Signifigant Industries : Textile Mfg.

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000720 TAVISTOCK LAGOON

MUNICIPALITY : EAST ZORRA-TAVISTOCK
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 7,146
POPULATION SERVED : 1,779
PERCENT SERVED : 24.8

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.772 1000 M3 DESIGN BOD5 : 320.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<-- FLOW DATA -->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	29.980	.960	2.110		394.0				187.5				9.2			
FEB	20.620	.710	1.330		305.0				214.0				4.2			
MAR	34.160	1.100	3.380		505.0				358.0				14.9			
APR	38.930	1.300	3.010	*	243.0	11.3	95		187.0	31.8	82		3.4	.8	76	
MAY	28.020	.900	1.870	*	365.0	54.6	85		172.5	215.1	-	-	6.7	6.1	8	
JUN	27.810	.930	1.840		593.0				220.5				20.2			
JUL	23.520	.780	1.770		340.0				175.0				8.6			
AUG	27.980	.900	2.080	*	244.0	39.0	84		147.7	85.2	42		8.9	3.1	65	
SEP	24.330	.810	2.090		740.0				413.4				14.2			
OCT	29.840	.960	3.770		575.0				333.8				*2.1			
NOV	22.530	.750	1.260	*	725.0	15.0	97		374.9	23.1	93		17.4	1.6	90	
DEC	28.180	.900	1.970	*	275.0	37.8	86		723.0	39.4	94		6.8	2.5	63	
TOTAL	335.900							157.9				71.6				3.7
AVERAGE		.917			442.0	31.5	92		292.2	78.9	72		13.8	2.8	79	
MAXIMUM			3.770													
NO. OF SAMPLES					11	18			11	18			9	16		

Waste Stabilization Pond

PROJECT : ENNISKILLEN TWP
(OIL CITY)

Cell Acreage : 5.4
Total Acreage : 5.4

Cell area: 2.2 ha
Total hectares: 2.2

Commenced Operation : May 1975

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

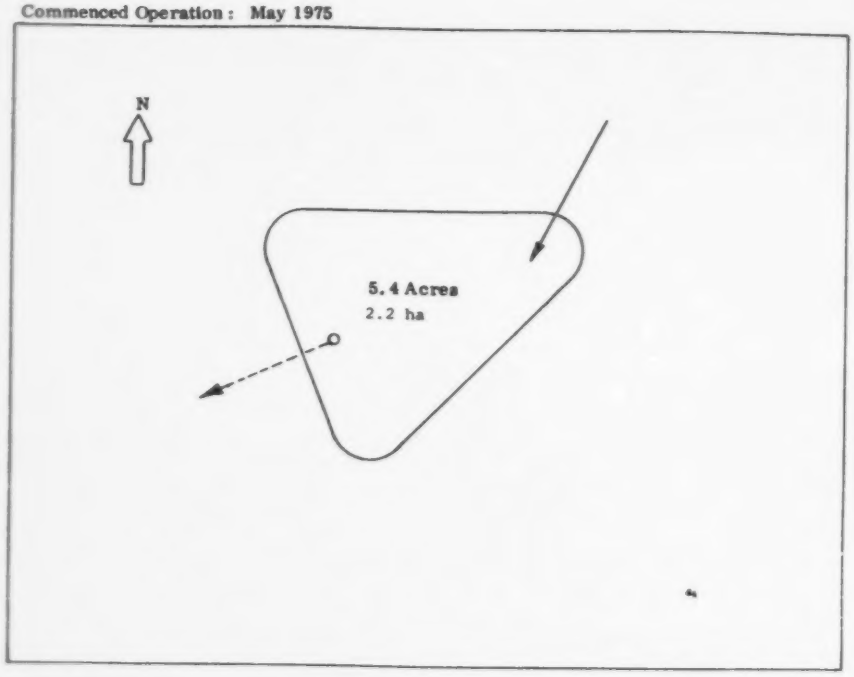
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 83 l gpm 6.2 l/s
Pump 2 : 83 l gpm 6.2 l/s

Total Cap : N./A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001738 OIL CITY LAGOON

MUNICIPALITY : ENNISKILLEN (OIL CITY)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL (* NO EFFLUENT SAMPLES ANALYZED)

CURRENT POPULATION : 3,440
POPULATION SERVED : 300
PERCENT SERVED : 8.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT (** DATA NOT AVAILABLE)

DESIGN CAPACITY : 0.168 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	* EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	* EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	* EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/80-DEC/80																
JAN	1.507	.049	.068		175.0				173.0				12.7			
FEB	1.866	.064	.079		225.0				151.0				13.0			
MAR	2.118	.068	.123	23.313	185.0	*			122.0	*			10.3	*		
APR	2.136	.071	.182		170.0				113.0				12.0			
MAY	1.797	.058	.136		128.0				95.0				7.8			
JUN	1.755	.058	.149		170.0				100.0				11.8			
JUL	1.524	.049	.071		82.0				87.5				8.4			
AUG	1.466	.047	.082		134.0				102.0				12.5			
SEP	1.429	.047	.072		124.0				61.5				7.8			
OCT	1.529	.049	.077		46.0				53.3				7.6			
NOV	1.306	.043	.051		175.0				99.1				10.4			
DEC	1.542	.050	.098		**				**				**			
TOTAL	19.975			23.313												
AVERAGE		.054			146.7				105.2				10.3			
MAXIMUM			.182	23.313												
NO. OF SAMPLES					11				11				11			

Waste Stabilization Pond

PROJECT : FOREST

Cell Acreage : 12.6 + 14.0 + 13.4 *Cell area: 5.1 + 5.7 + 5.4 ha*

Total Acreage : 40 *Total hectares : 16.2*

Commenced Operation : Dec. 1972

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

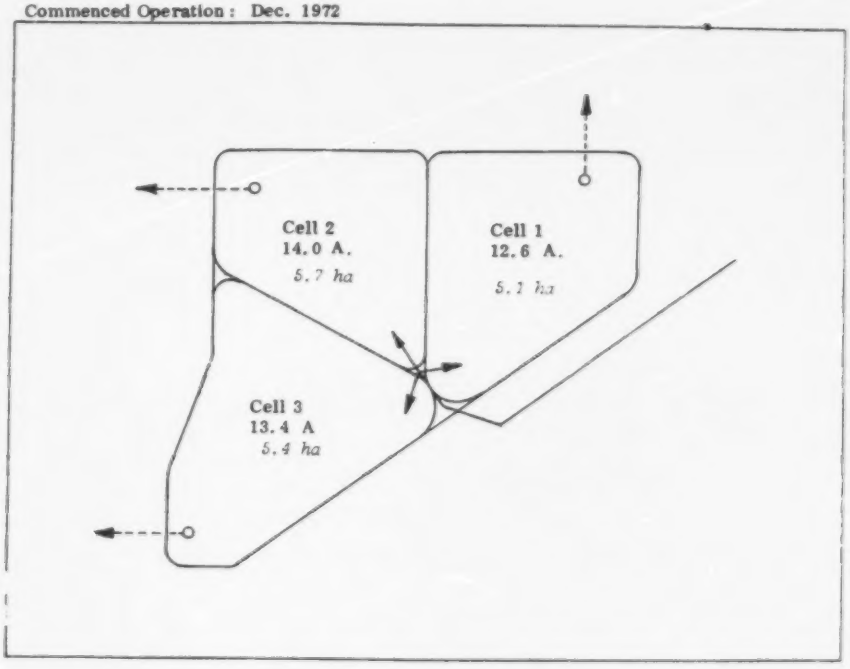
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 620 I gpm 46.9 l/s
Pump 2 : 620 I gpm 46.9 l/s

Total Cap : 775 I gpm
58.7 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001346 FOREST LAGOON

MUNICIPALITY : FOREST
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

(NO SAMPLES ANALYZED IN 1980)
(TRANSPORTATION PROBLEM FOR 1981 SAMPLES RESOLVED)

CURRENT POPULATION : 2,654
POPULATION SERVED : 2,650
PERCENT SERVED : 99.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.350 1000 M3 DESIGN BOD5 : 22.4 KG/HA/DAY DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	26.217	.846	.977													
FEB	18.425	.635	.909													
MAR	25.148	.811	1.291													
APR	26.944	.898	1.318													
MAY	23.376	.754	.923													
JUN	20.921	.697	.850													
JUL	FLOW METER OUT OF SERVICE															
AUG																
SEP																
OCT																
NOV																
DEC	27.494	.886	1.209													
TOTAL																
AVERAGE		.790														
MAXIMUM			1.318													
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : GLENCOE

Cell Acreage : 14.0 + 14.0 *Cell area : 5.7 + 5.7 ha*

Total Acreage : 28.0 *Total hectares : 11.4*

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal: YES

- ☐ Batch
- ☐ Continuous
- ☐ None

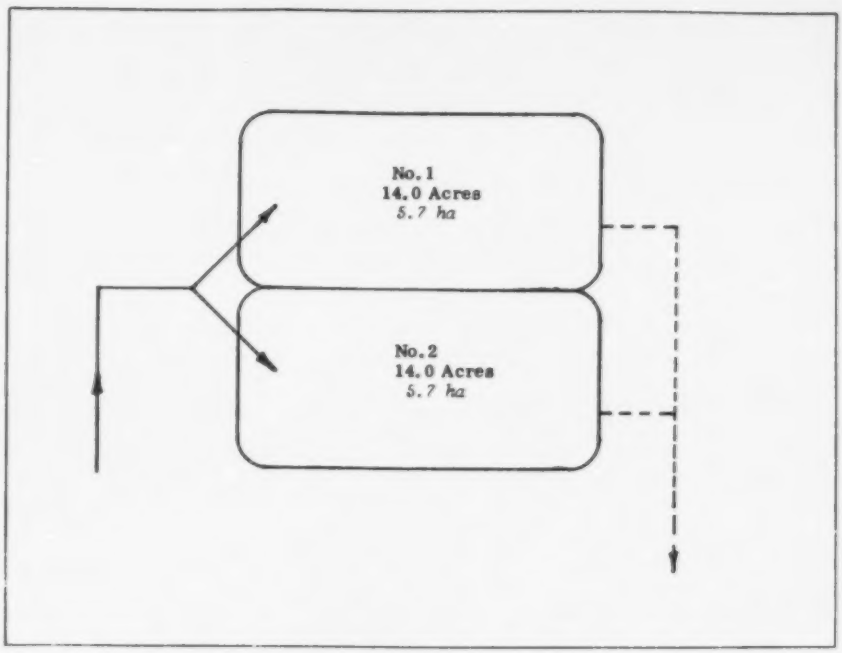
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 486 Igpm 36.8 l/s
Pump 2 : 486 Igpm 36.8 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001845 GLENCOE LAGOON

MUNICIPALITY : GLENCOE
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL (* NO SAMPLES ANALYZED)

CURRENT POPULATION : 2,100
POPULATION SERVED : 1,557
PERCENT SERVED : 74.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT (** DATA NOT AVAILABLE)

DESIGN CAPACITY : 0.945 1000 M3 DESIGN BOD5 : 212.0 MG/L DESIGN SUSP.SOLIDS : 212.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	10.678	.344	.376		*				*				*			
FEB	9.141	.315	.545		230.0				189.0				11.4			
MAR	14.601	.471	.916		175.0				159.0				11.0			
APR	15.217	.507	.931		*				*				*			
MAY	12.159	.392	.634		146.0				91.0				7.9			
JUN	11.532	.384	.839		150.0				195.0				8.6			
JUL	10.876	.351	.659		143.0				107.7				9.4			
AUG	14.354	.463	2.580		325.0				519.4				21.8			
SEP	10.681	.356	.643		116.0				99.4				8.8			
OCT	13.293	.429	.635		*				*				*	1.1		
NOV	11.057	.369	.595	**	*	18.7			*	35.8			*	1.2		
DEC	14.920	.481	.652		*				*				*			
TOTAL	148.509							24.4				23.5				1.5
AVERAGE		.405			183.5	18.7	89		194.3	35.8	81		11.2	1.1	89	
MAXIMUM			2.580													
NO. OF SAMPLES					8	4			8	4			8	5		

Waste Stabilization Pond

PROJECT : (COTTAM) GOSFIELD

Cell Acreage : 10.0 10.0 *Cell area : 4.0 + 4.0 ha*

Total Acreage : 20.0 *Total hectares : 8.0*

Commenced Operation: JUN 1976

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- □ Continuous
- □ Annual
- ■ Other : Semi-annual

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

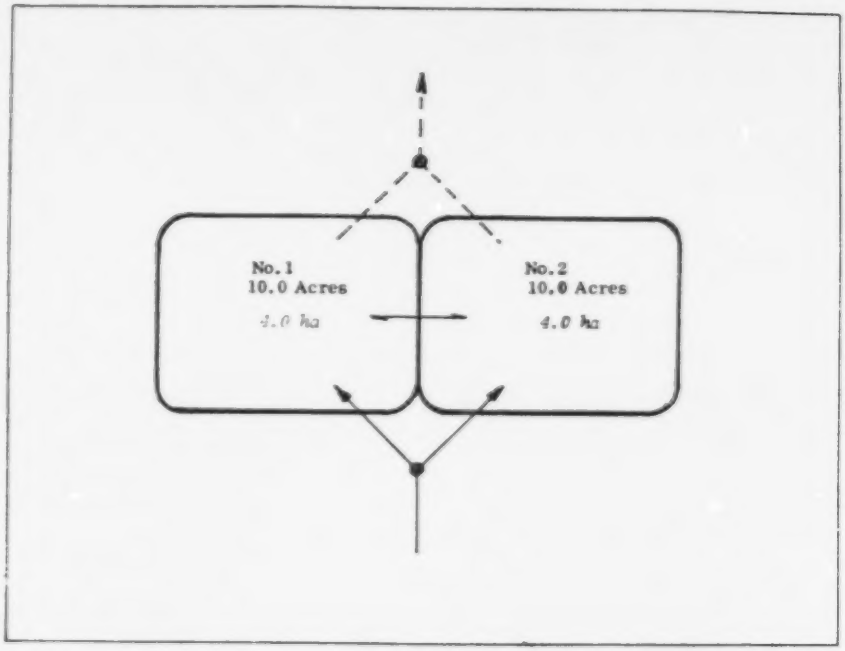
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 370 (U.S.)gpm 23.3 l/s
Pump 2 : 370(U.S.)gpm 23.3 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002005 COTTAM LAGOON

MUNICIPALITY : GOSFIELD N. (PV COTTAM)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 850
POPULATION SERVED : 600
PERCENT SERVED : 70.5

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	6.808	.220	.265		64.0				54.0				4.8			
FEB	5.934	.205	.268		*				*				*			
MAR	7.727	.249	.326		90.0				103.0				6.2			
APR	7.768	.259	.404	69.300	98.5	12.6	87		116.5	18.0	84		7.9	.2	96	
MAY	6.754	.218	.266	97.010	58.0	17.0	70		56.0	23.3	58		4.6	.5	87	
JUN	7.134	.238	.309		*				*				*			
JUL	6.697	.216	.359		100.0				129.0				7.5			
AUG	7.119	.230	.273		30.0				13.5				3.3			
SEP	6.770	.226	.264		*				*				*			
OCT	6.402	.207	.232		110.0				107.0				6.8			
NOV	6.260	.209	.273		86.0				51.4				5.7			
DEC	6.904	.223	.250		72.0				45.7				4.2			
TOTAL	82.277			166.310				5.2				4.5				0.4
AVERAGE		.225			78.7	14.8	81		75.1	20.6	72		5.6	.4	92	
MAXIMUM			.404	97.010												
NO. OF SAMPLES					10	4			10	4			10	4		

Waste Stabilization Pond

PROJECT : HARROW

Cell Acreage : 15.0 + 15.0 + 15.0 *Cell area : 6.1 + 6.1 + 6.1 ha*

Total Acreage : 45.0 *Total hectares : 18.3*

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : Series-parallel

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal: YES

- ■ Batch
- ☐ Continuous
- ☐ None

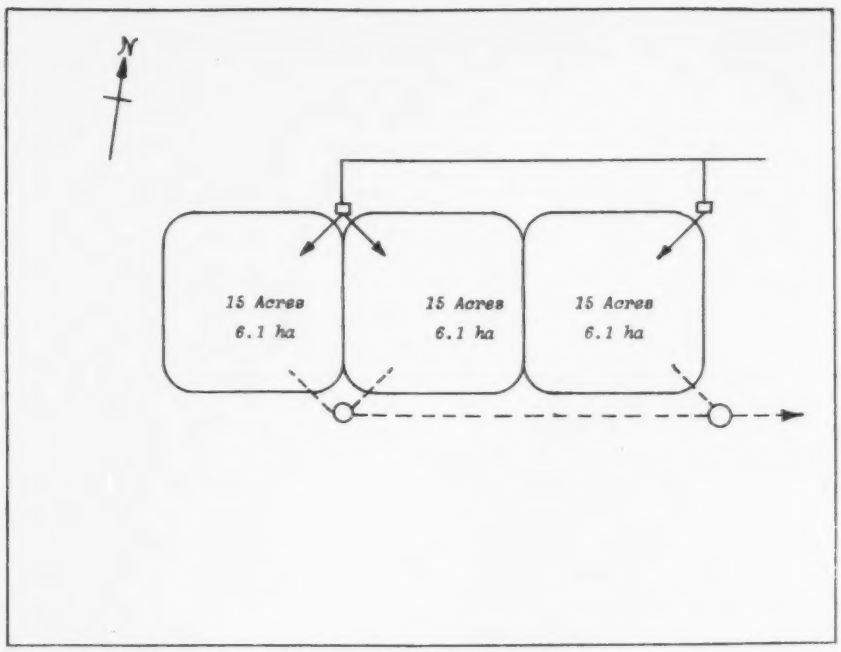
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002103 HARROW LAGOON

MUNICIPALITY : HARROW
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,264
POPULATION SERVED : 2,264
PERCENT SERVED : 100.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.045 1000 M3 DESIGN BOD5 : 250.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	28.121	.907	1.068		176.5				398.2				8.3			
FEB	25.897	.893	1.068		435.2				890.0				15.3			
MAR	31.921	1.030	1.450		165.4				313.6				9.0			
APR	31.302	1.043	1.332	173.495	176.2	11.0	93		585.7	22.9	96		7.2	.9	87	
MAY	29.703	.958	1.305	53.688	123.0	17.3	85		116.7	44.0	62		6.3	1.3	79	
JUN	29.245	.975	1.450		185.0				99.0				5.3			
JUL	29.821	.962	1.910		36.0				36.8				4.2			
AUG	30.871	.996	1.709		66.0				77.3				4.8			
SEP	30.287	1.010	1.246		104.0				104.8				6.4			
OCT	29.504	.952	1.100		102.0				92.6				7.4			
NOV	28.378	.946	1.218	205.777	180.0	5.5	96		156.2	11.3	92		9.1	.4	95	
DEC	29.893	.964	1.159		134.0				121.7				6.2			
TOTAL	354.943			432.960				51.7				79.2				2.3
AVERAGE		.970			156.9	11.2	92		249.3	26.0	89		7.4	.8	88	
MAXIMUM			1.910	205.777												
NO. OF SAMPLES					28	32			28	32			25	32		

Waste Stabilization Pond

PROJECT : HENSALL

Cell Acreage : 12.05 + 12.68 + 12.15 *Cell area : 4.9 + 5.1 + 4.9 ha*

Total Acreage : 36.88 *Total hectares : 14.9*

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

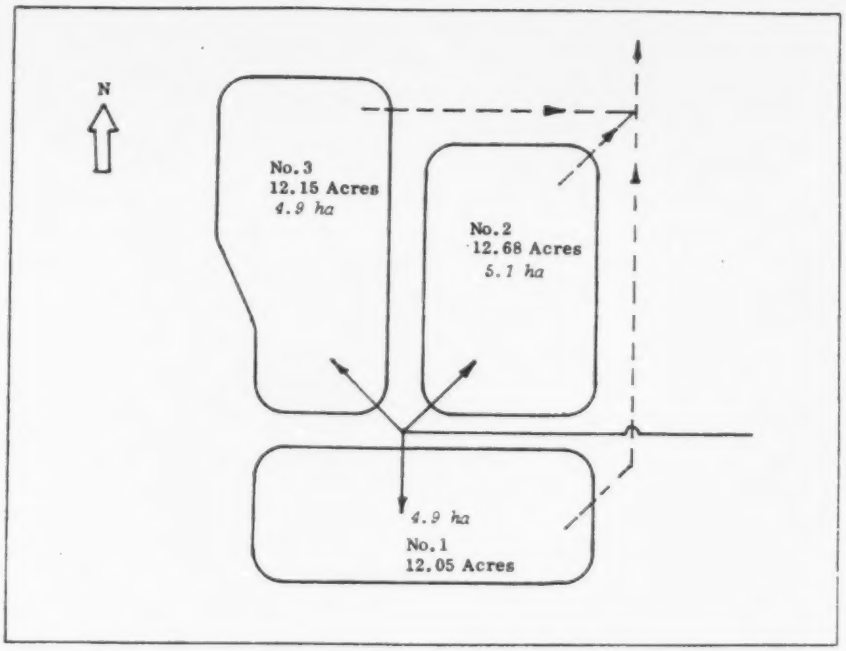
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 335 lgpm 25.4 l/s
Pump 2 : 335 lgpm 25.4 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000926 HENSALL LAGOON

MUNICIPALITY : HENSALL
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL (* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,005
POPULATION SERVED : 987
PERCENT SERVED : 98.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.568 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS : MG/L

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/80-DEC/80																
JAN	12.442	.401	.668		58.0				65.0				6.1			
FEB	9.765	.337	.459		200.0				*				9.8			
MAR	14.102	.455	.964	*	96.0	18.0	81		*	8.0			6.8	2.3	66	
APR	12.283	.409	.709		*				*				7.7			
MAY	10.385	.335	.686	*	108.0	2.0	98		89.0	11.0	87		6.1	.3	94	
JUN	8.905	.297	.390		160.0				192.0				10.9			
JUL	12.461	.402	.768		118.0				162.0				3.1			
AUG	9.059	.292	.391		118.0				105.7				8.2			
SEP	9.228	.307	.381		180.0				156.4				8.2			
OCT	12.415	.400	.481	*	70.0	2.8	96		108.6	2.8	97		6.0	1.2	78	
NOV	10.358	.345	.404		142.0				188.4				8.6			
DEC	11.052	.357	.625		NO SAMPLES ANALYZED				NO SAMPLES ANALYZED				NO SAMPLES ANALYZED			
TOTAL	132.455							15.6				16.7				0.9
AVERAGE		.361			125.0	7.6	93		133.3	7.2	94		7.4	1.3	82	
MAXIMUM			.964													
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : LUCAN

Cell Acreage : 5 + 5

Total Acreage : 10

Cell area : 2.0 + 2.0 ha

Total hectares : 4.0

Commenced Operation (Cell 1) : 1964
Expansion (Cell 2) : 1972

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

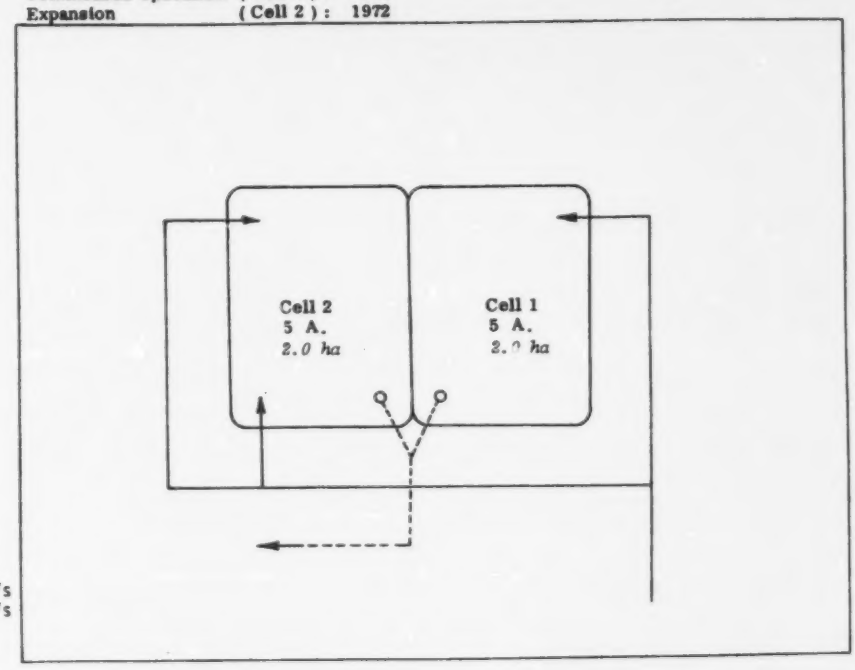
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 300 I gpm 22.7 l/s
Pump 2 : 300 I gpm 22.7 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000855 LUCAN LAGOON

MUNICIPALITY : LUCAN
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,547
POPULATION SERVED : 1,589
PERCENT SERVED : 102.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.377 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/80-DEC/80																
JAN	18.826	.607	1.254		72.0				43.0				6.2			
FEB	12.716	.439	1.018		56.0				42.0				3.8			
MAR	24.726	.798	3.036		82.0				61.0				5.3			
APR	23.075	.769	2.711	*	113.0	30.4			81.0	47.0			6.0	2.9		
MAY	14.565	.470	0.948		82.0				133.0				6.0			
JUN	14.421	.481	1.190		84.0				104.0				6.3			
JUL	13.951	.450	.894		48.0				55.0				6.6			
AUG	12.086	.390	.592		42.0				36.6				3.0			
SEP	13.378	.446		*	127.0	10.8	91		102.8	97.3	5		1.2	.4	64	
OCT	19.876	.641		*	9.0	5.3	41		14.0	12.5	10		1.2	.4	64	
NOV	14.351	.478	.611	*	80.0	19.1	76		56.3	16.3	71		5.7	3.6	36	
DEC	21.716	.701	2.393		NO SAMPLES ANALYZED				NO SAMPLES ANALYZED				NO SAMPLES ANALYZED			
TOTAL	203.687							13.4				4.7				0.7
AVERAGE		.556			72.9	16.4			66.2	43.9			5.5	1.8		
MAXIMUM			3.036													
NO. OF SAMPLES					14	14			14	13			14	14		

Waste Stabilization Pond

PROJECT : MARKDALE

Cell Acreage : 14.0

Total Acreage : 14.0

Commenced Operation : Nov. 1968

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other : Seasonal (Summer)
  Continuous (Winter)

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

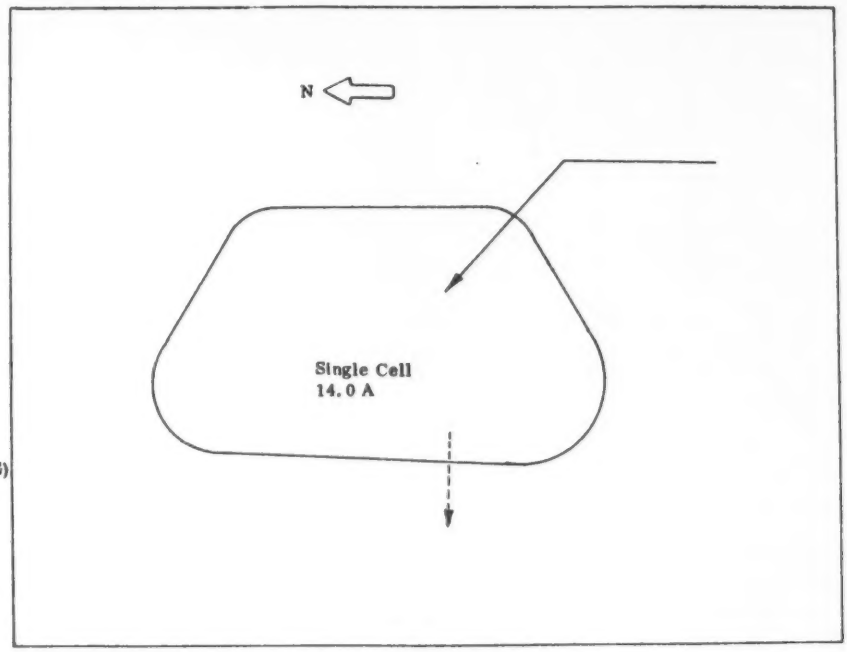
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator (NO RECORDING)
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 : (GRAVITY FLOW)

Total Cap :



Signifigant Industries : Nil

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000418 MARKDALE LAGOON

MUNICIPALITY : MARKDALE
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,337
POPULATION SERVED : 1,340
PERCENT SERVED : 100.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.636 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	BIOCHEMICAL OXYGEN DEMAND INFLUENT MG/L	BOD EFFLUENT MG/L	BOD REDUCTION %	BOD REDUCTION 1000 KG	SUSPENDED SOLIDS INFLUENT MG/L	SS EFFLUENT MG/L	SS REDUCTION %	SS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TP EFFLUENT MG/L	TP REDUCTION %	TP REDUCTION 1000 KG
JAN/80-DEC/80																
JAN					110.0				127.0				34.9			
FEB	GRAVITY FLOW TO LAGOONS.				56.0				98.0				11.0			
MAR					126.0				188.0				5.8			
APR					64.0	11.1	82		76.0	13.2	82		7.3	2.8	61	
MAY	NO MECHANISM TO MEASURE				60.0	11.6	80		78.0	21.6	72		4.9	1.1	77	
JUN					56.0				97.0				5.5			
JUL					56.0				65.0				5.5			
AUG	FLOW AT PRESENT.				104.0				171.8				8.4			
SEP					132.0				160.8				9.2			
OCT					91.8	9.2	89		107.4	10.9	89		6.6	.5	91	
NOV					150.0	11.4	92		216.1	9.8	95		10.3	.8	92	
DEC					130.0				88.3				3.5			
TOTAL																
AVERAGE					94.6	10.8	88		122.7	13.8	88		9.4	1.3	85	
MAXIMUM																
NO. OF SAMPLES					8	8			8	8			7	7		

Waste Stabilization Pond

PROJECT : MILVERTON

Cell Acreage : 15.0

Total Acreage : 15.0

Cell area: 6.1 ha

Total hectares: 6.1

Commenced Operation : Mar. 1967

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ■ Continuous
- ☐ None

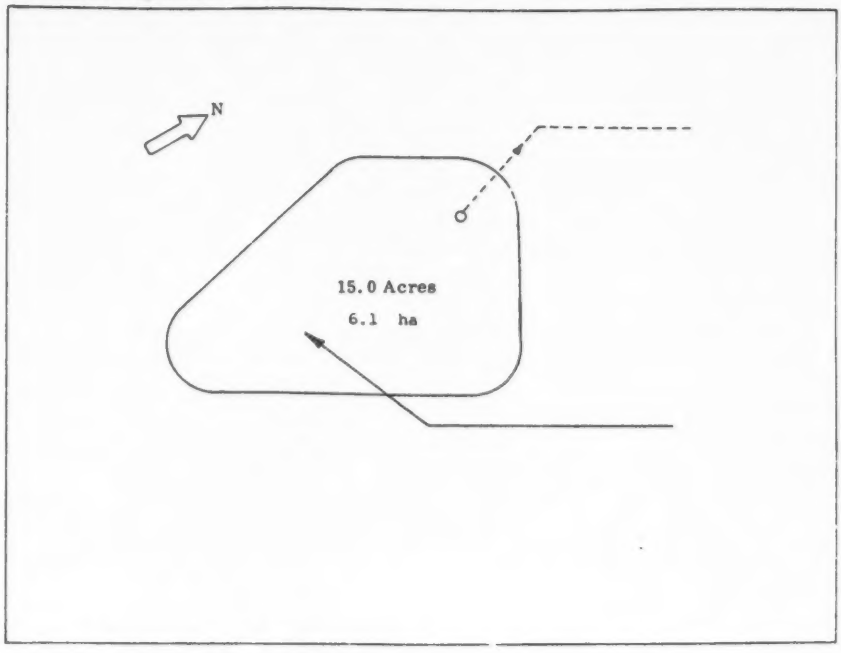
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 367 Igpm 27.8 l/s
Pump 2 : 367 Igpm 27.8 l/s

Total Cap : N/A



Signifigant Industries : Glitz Cheese

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001079 MILVERTON LAGOON

* DENOTES QUALITY OF UNDERDRAIN TILE DISCHARGES FROM SPRAY IRRIGATION FIELDS

MUNICIPALITY : MILVERTON
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,469
POPULATION SERVED : 1,443
PERCENT SERVED : 98.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

** INCLUDES SAMPLES OF UNDERDRAIN TILE DISCHARGE

DESIGN CAPACITY : 0.363 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	22.300	.720	1.040		174.0	23.0	86		381.0	69.0	81		9.4	1.3	85	
FEB	17.600	.600	1.280		1040.0	63.0	93		368.0	46.0	87		20.5	2.3	88	
MAR	26.510	.860	4.304		352.5				255.0				7.2			
APR	23.410	.780	1.980		1376.0	69.0	94		374.0	126.0	66		25.3	5.0	80	
MAY	21.450	.690	1.030		830.0				515.0				32.2			
JUN	17.570	.580	.800		172.5	*4.4	97		306.0	*12.0	96		10.1	*.4	95	
JUL	18.690	.600	.720		327.0	*3.4	98		1591.0	*31.0	91		14.7	*.5	96	
AUG	14.640	.470	.730		790.0	*6.2	99		323.0	*78.0	75		21.3	*.4	98	
SEP	14.640	.470	.770		913.0	*5.6	99		347.6	*66.9	80		19.9	*.4	97	
OCT	18.220	.580	1.000		385.0				281.1				16.3			
NOV	17.850	.590	.860		237.5	32.0	86		251.4	114.7	54		8.6	2.0	76	
DEC	18.940	.610	1.090		165.0	34.3	79		226.6	147.5	34		7.4	3.7	50	
TOTAL	231.820							124.4				80.4				3.3
AVERAGE		.629			563.5	26.7	95		434.9	87.9	79		16.0	1.8	88	
MAXIMUM			4.304													
NO. OF SAMPLES					24	16			24	16			24	16		

Waste Stabilization Pond

PROJECT : MITCHELL

Cell Acreage : 21 + 21 + 25.5 Cell area : 8.5 + 8.5 + 10.3 ha

Total Acreage : 67.5 Total hectares : 27.3

Commenced Operation : Aug. 1961

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal (When Possible)
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

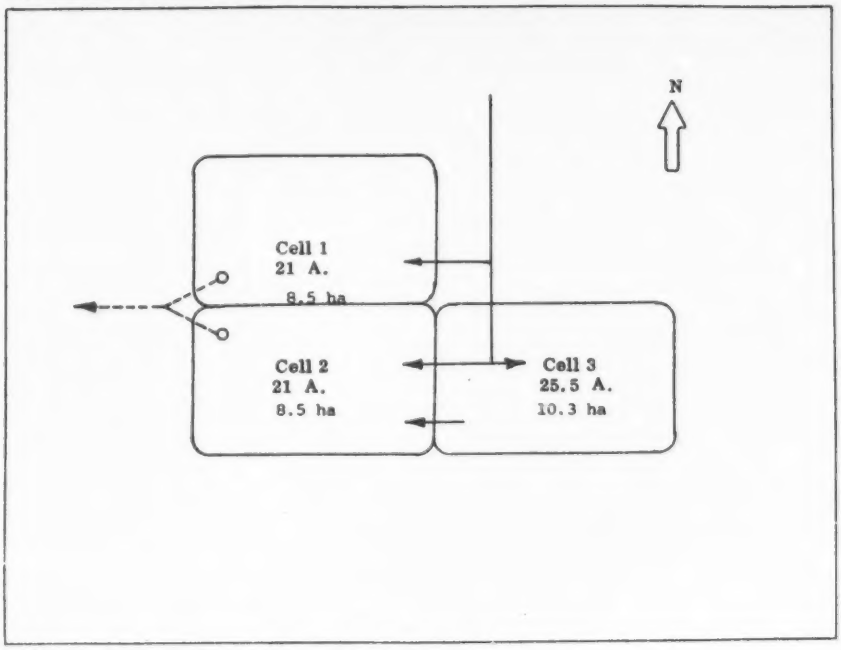
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 1022 Igpm 77.4 l/s
Pump 2 : 671 Igpm 50.8 l/s

Total Cap : N/A



Signifigant Industries : Stacey Bros Ltd (Creamery)

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000472 MITCHELL LAGOON

MUNICIPALITY : MITCHELL
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,750
POPULATION SERVED : 2,706
PERCENT SERVED : 98.4

(* NO SAMPLES ANALYZED
(** DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 3.045 1000 M3 DESIGN BOD5 : 215.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	47.500	1.530	3.240		28.5				404.0				18.8			
FEB	38.200	1.320	3.080		*				*				*			
MAR	67.500	2.180	6.550		116.0				131.0				5.6			
APR	89.000	2.970	9.100	**	233.0	22.0	90		275.0	39.5	85		9.7	1.7	82	
MAY	63.500	2.040	4.580		690.0				567.0				29.0			
JUN	47.000	1.570	2.600		42.0				105.0				5.7			
JUL	42.000	1.350	3.820		245.0				144.5				8.8			
AUG	33.500	1.080	3.110		300.0				426.1				17.2			
SEP	36.700	1.220	2.220		155.0				101.7				7.6			
OCT	43.790	1.410	2.500		175.0				400.5				15.4			
NOV	38.030	1.270	1.980	**	*	8.9			*	15.8			*	1.9		
DEC	51.240	1.650	3.120		140.0				191.3				8.6			
TOTAL	597.960							117.8				147.7				6.4
AVERAGE		1.633			212.4	15.4	92		274.6	27.6	89		12.6	1.8	85	
MAXIMUM			9.100													
NO. OF SAMPLES					10	5			10	5			10	5		

352

Waste Stabilization Pond

PROJECT : MOORE TWP. (BRIGDEN)

Cell Acreage : 10 + 10

Total Acreage : 20

Cell area : 4.0 + 4.0 ha

Total hectares : 8.0

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

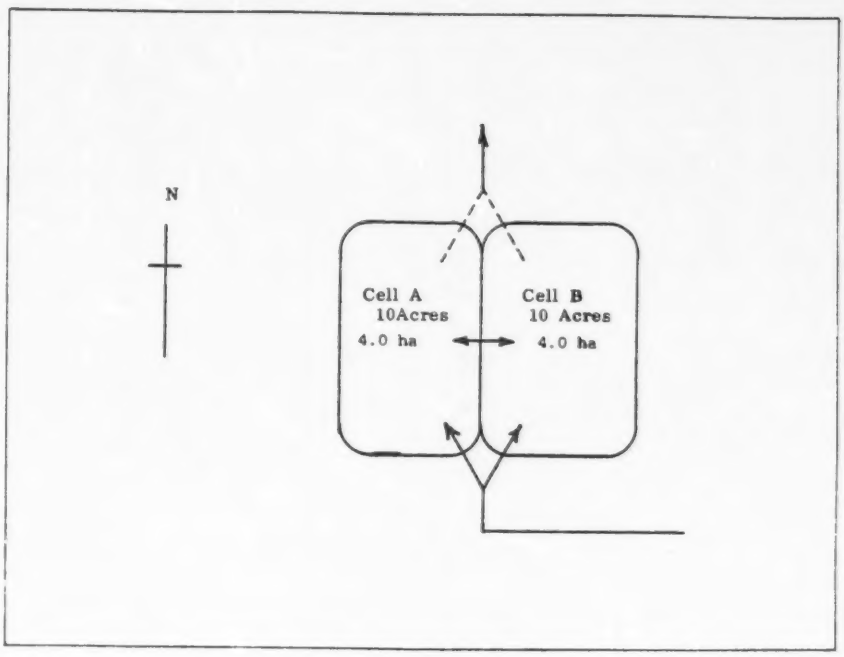
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 265 Igpm 20.1 l/s
Pump 2 : 265 Igpm 20.1 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002023 BRIGDEN POLICE VILLAGE LAGOON

MUNICIPALITY : MOORE (BRIGDEN)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 500
POPULATION SERVED : 500
PERCENT SERVED : 100.0

(* NO DATA AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.340 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	.354	.011	.039		NO SAMPLES ANALYSED				NO SAMPLES ANALYSED				NO SAMPLES ANALYSED			
FEB	.313	.010	.070		205.0				251.0				10.8			
MAR	.549	.017	.070		250.0				176.0				11.3			
APR	.540	.018	.056		108.0				95.0				7.3			
MAY	.433	.013	.065		134.0				142.0				11.5			
JUN	.429	.033	.066		134.0				152.0				8.9			
JUL	.409	.031	.047		NO SAMPLES ANALYSED				NO SAMPLES ANALYSED				NO SAMPLES ANALYZED			
AUG	.391	.012	.043		470.0				554.0				11.1			
SEP	.424	.032	.043	*	370.0	.8	99		502.2				13.0	.2	98	
OCT	.463	.033	.053	*	185.0	.4	99		100.9	3.5	96		11.3	.2	97	
NOV	.351	.030	.040		245.0				237.2				9.9			
DEC	.496	.016	.050		NO SAMPLES ANALYZED				NO SAMPLES ANALYSED				NO SAMPLES ANALYZED			
TOTAL	5.152							1.2				1.2				0.05
AVERAGE		.021			233.4	.6	99		245.5	3.5	98		10.5	.2	97	
MAXIMUM			.070													
NO. OF SAMPLES					9				9							

375

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002443 NEUSTADT LAGOON

MUNICIPALITY : NORMANBY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL CONTROLLED EFFLUENT RELEASE

NO DISCHARGE IN 1980 - NEW SYSTEM

CURRENT POPULATION : 498
POPULATION SERVED : 350
PERCENT SERVED : 70.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.545 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	.820	.026	.057		90.0				91.5				6.9			
FEB	.852	.029	.033		140.0				109.5				7.6			
MAR	1.871	.060	.158		56.0				58.5				4.3			
APR	2.311	.077	.157		68.0				112.5				6.6			
MAY	1.672	.054	.095		176.0				144.0				6.0			
JUN	1.468	.049	.067		128.0				158.0				7.5			
JUL	1.445	.047	.056		158.0				116.2				8.8			
AUG	1.599	.051	.060		347.5				124.1				9.8			
SEP	1.714	.057	.088		197.5				180.2				12.3			
OCT	2.518	.081	.120		227.5				172.2				8.8			
NOV	2.535	.085	.098		112.5				167.1				5.9			
DEC	3.380	.109	.193		295.5				517.1				14.1			
TOTAL	22.185															
AVERAGE		.060			166.3				162.5				8.2			
MAXIMUM			.193													
NO. OF SAMPLES					23				23				20			

Waste Stabilization Pond

PROJECT : NORWICH

Cell Acreage : 15 + 15 — Cell area : 6.1 + 6.1 ha

Total Acreage : 30 — Total hectares : 12.2

Commenced Operation (Cell 1) : May 1974
Expansion : (Cell 2) : Spring 1976

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- ■ Continuous
- □ None

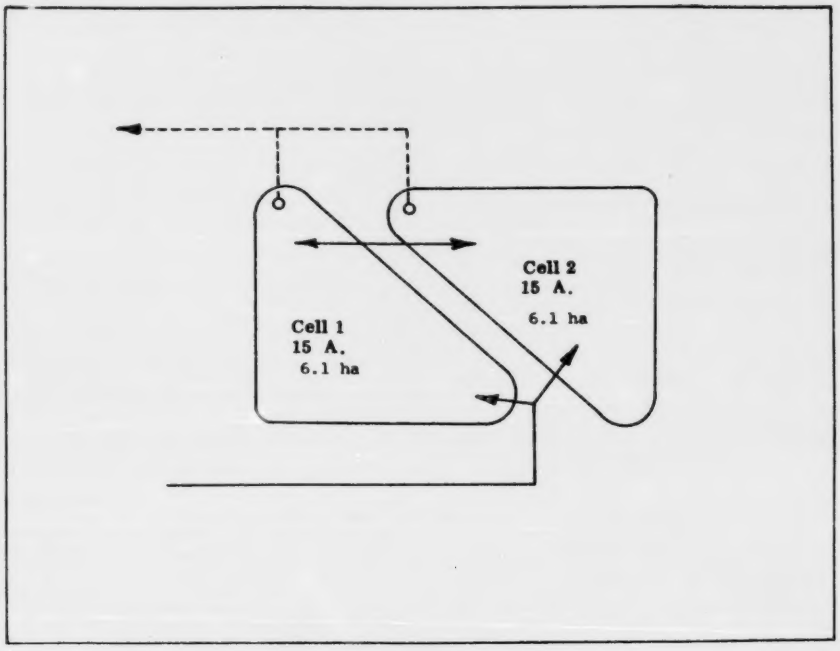
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 800 I gpm 60.6 l.s
Pump 2 : 800 I gpm 60.6 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001480 NORWICH LAGOON

MUNICIPALITY : NORWICH
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,000
POPULATION SERVED : 1,000
PERCENT SERVED : 50.0

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.995 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	23.140	.750	2.410		280.0				712.0				8.1			
FEB	17.350	.600	1.050		650.0				1946.0				9.7			
MAR	26.870	.870	2.730		230.0				508.0				9.9			
APR	33.930	1.130	1.810	*	56.0	15.2	72		60.0	29.0	51		2.1	1.0	52	
MAY	24.640	.790	1.640		320.0				196.0				9.3			
JUN	18.180	.600	1.230		64.0				208.0				7.8			
JUL	16.040	.520	1.050		104.0				222.0				7.9			
AUG	15.340	.490	.820		*				*				*			
SEP	16.450	.540	.810		134.0				133.8				6.5			
OCT	23.210	.750	1.550	*	220.0	16.0	92		871.2	57.6	93		11.4	1.3	88	
NOV	17.000	.560	.720		180.0				1461.0				9.5			
DEC	22.680	.730	1.450		490.0				774.4				8.0			
TOTAL	254.830							59.2				153.2				1.8
AVERAGE		.694			248.0	15.6	93		644.7	43.3	93		8.2	1.1	85	
MAXIMUM			2.730													
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : OIL SPRINGS

Cell Acreage : 7.0 + 7.0 Cell area : 2.8 + 2.8 ha

Total Acreage : 14.0 Total hectares : 5.6

Commenced Operation : November 1976

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

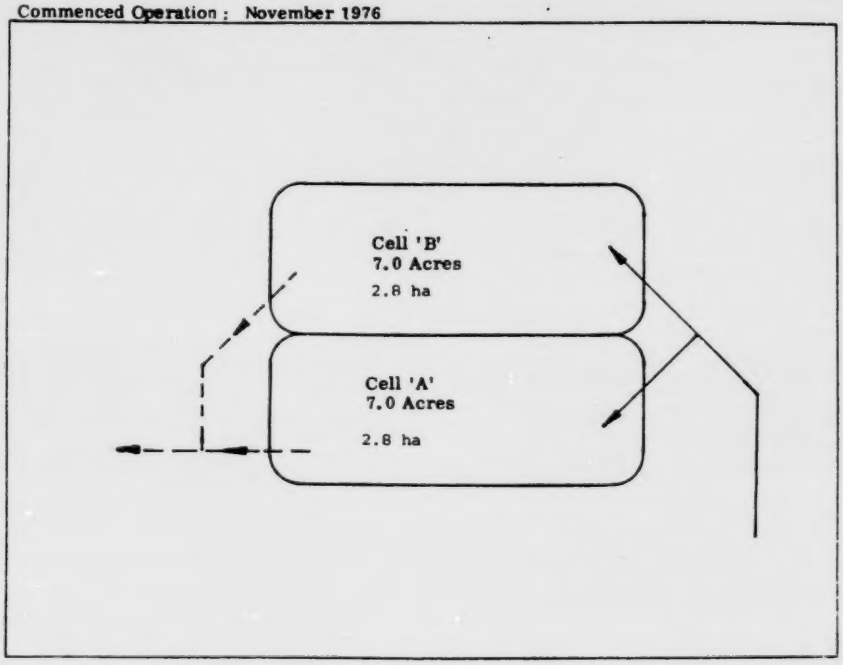
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001998 OIL SPRINGS LAGOON

MUNICIPALITY : OIL SPRINGS
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 675
POPULATION SERVED : 630
PERCENT SERVED : 93.3

(* NO EFFLUENT SAMPLES ANALYZED)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	5.616	.181	.323		150.0				148.0				8.9			
FEB	5.012	.173	.210		112.0				171.0				10.0			
MAR	6.752	.218	.404	49.339	114.0	*			213.0	*			9.3	*		
APR	6.773	.226	.659		130.0				106.0				6.0			
MAY	5.511	.178	.286		122.0				145.0				7.7			
JUN	5.357	.178	.264		120.0				94.0				9.3			
JUL	5.279	.170	.262		86.0				106.0				8.7			
AUG	5.536	.178	.205		86.0				86.0				9.1			
SEP	4.326	.144	.210		116.0				126.5				8.5			
OCT	5.008	.161	.495		42.0				42.4				6.1			
NOV	4.254	.141	.413		116.0				188.6				9.4			
DEC	4.327	.139	.246													
TOTAL	63.751			49.339												
AVERAGE		.174			108.5				129.6				8.4			
MAXIMUM			.659	49.339												
NO. OF SAMPLES					11				11				11			

Waste Stabilization Pond

PROJECT : PORT STANLEY

Cell Acreage : 10 + 10 + 10 + 10 — Cell area : 4.0 + 4.0 + 4.0 + 4.0 ha

Total Acreage : 40 — Total hectares : 16.0

Commenced Operation : Jan. 1973

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

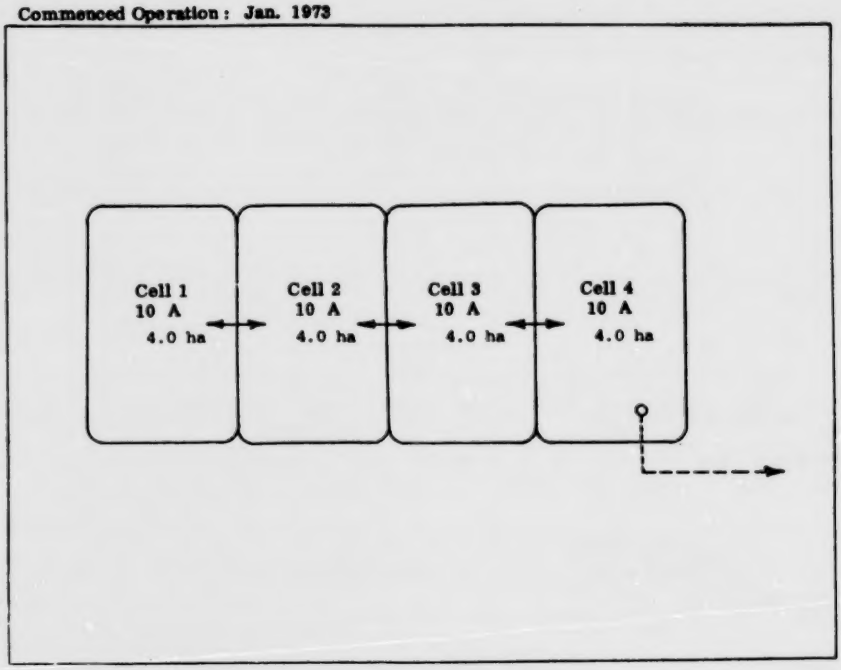
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 1000 US gpm 63.1 l/s
Pump 2 : 1000 US gpm 63.1 l/s

Total Cap : 1500 US gpm 94.7 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001373 PORT STANLEY LAGOON (* DATA NOT AVAILABLE)

MUNICIPALITY : PORT STANLEY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,902
POPULATION SERVED : 1,680
PERCENT SERVED : 98.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.468 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	25.000	.806	.900		164.0				272.5							
FEB	20.800	.743	.800		34.0				20.5				2.5			
MAR	27.600	.920	1.300		57.0				40.5				3.0			
APR	32.900	1.090	1.800	*	145.0	20.5	85		83.0	73.5	11		6.2	1.2	80	
MAY	28.600	.953	1.133	*	81.0	14.8	81		62.5	14.8	76		4.3	.4	90	
JUN	29.300	.945	1.400		48.5				34.5				2.3			
JUL	29.000	.910	1.450		52.0				52.6				4.3			
AUG	27.000	.964	1.500		66.0				79.9				4.2			
SEP	25.800	.782	.950		344.6				204.9				8.6			
OCT	21.700	.723	.900	*	63.3	6.8	89		29.3	36.1	-	-	4.1	.6	83	
NOV	20.800	.671	.800	*	50.0	2.2	95		23.4	26.1	-	-	3.3	.4	87	
DEC	23.100	.770	.800		30.0				21.7				2.6			
TOTAL	311.600							26.0				12.3				1.1
AVERAGE		.856			94.6	11.0	88		77.1	37.6	51		4.1	.6	83	
MAXIMUM			1.800													
NO. OF SAMPLES					25	42			25	43			23	43		

Waste Stabilization Pond

PROJECT : RALEIGH & TILBURY EAST (P.V. MERLIN)

Cell Acreage : 14.0 + 13.5

Cell area : 5.7 + 5.5 ha

Total Acreage : 27.5

Total hectares : 11.2

Commenced operation: OCT 1976

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

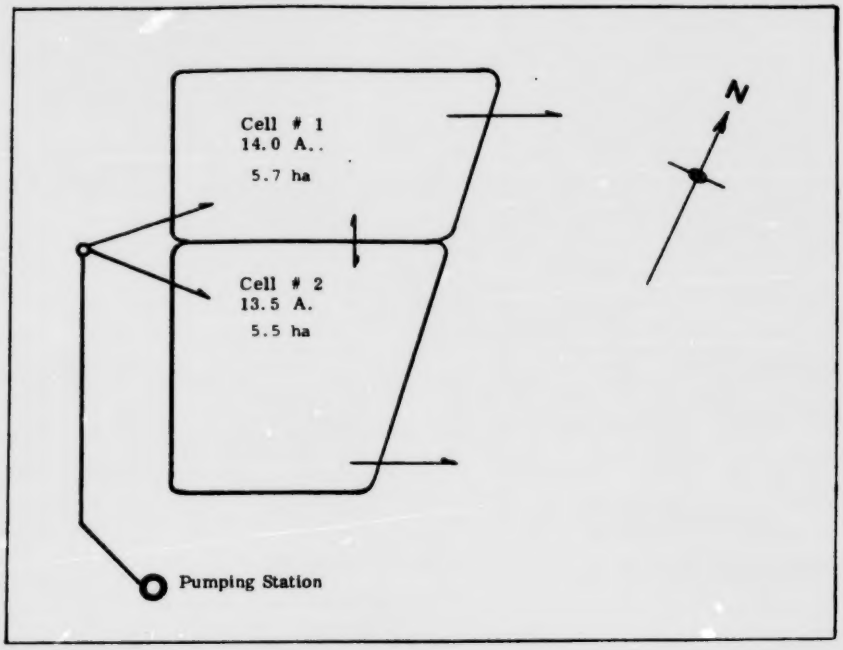
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 290 Igpm 22.0 l/s
Pump 2 : 290 Igpm 22.0 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000935 MERLIN P. V. LAGOON

MUNICIPALITY : RALEIGH TILBURY E(MERLIN
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 657
POPULATION SERVED : 640
PERCENT SERVED : 97.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.931 1000 M3 DESIGN BOD5 : 110.0 MG/L DESIGN SUSP.SOLIDS : 110.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	5.090	.164	.390		275.0				1561.0				10.0			
FEB	4.245	.146	.241		200.0				257.0				16.0			
MAR	5.613	.181	.506	*	204.0	9.4	95		125.0	20.5	83		10.8	.3	97	
APR	5.875	.195	.324		730.0				314.0				14.5			
MAY	4.997	.161	.282		280.0				744.0				8.0			
JUN	5.035	.167	.368		255.0				162.0				16.5			
JUL	4.410	.142	.286		240.0				213.5				7.5			
AUG	4.790	.154	.297		130.0				115.3				6.9			
SEP	5.119	.170	.328		510.0				6853.6				11.0			
OCT	4.706	.151	.255		360.0				560.0				13.3			
NOV	4.362	.145	.241	*	670.0	11.4	98		1288.4	39.6	96		12.5	.8	93	
DEC	4.686	.151	.290		246.0				376.8				12.0			
TOTAL	58.928							19.5				59.9				0.6
AVERAGE		.161			341.6	10.4	96		1047.5	30.0	97		11.5	.5	94	
MAXIMUM			.506													
NO. OF SAMPLES					12	4			12	4			12	4		

Waste Stabilization Pond

PROJECT : RIDGETOWN

Cell Acreage : 13.5 + 13.0 + 13.0 Cell area : 5.5 + 5.2 + 5.2 ha

Total Acreage : 39.5 Total hectares: 15.9

Commenced Operation : Sept. 1973

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

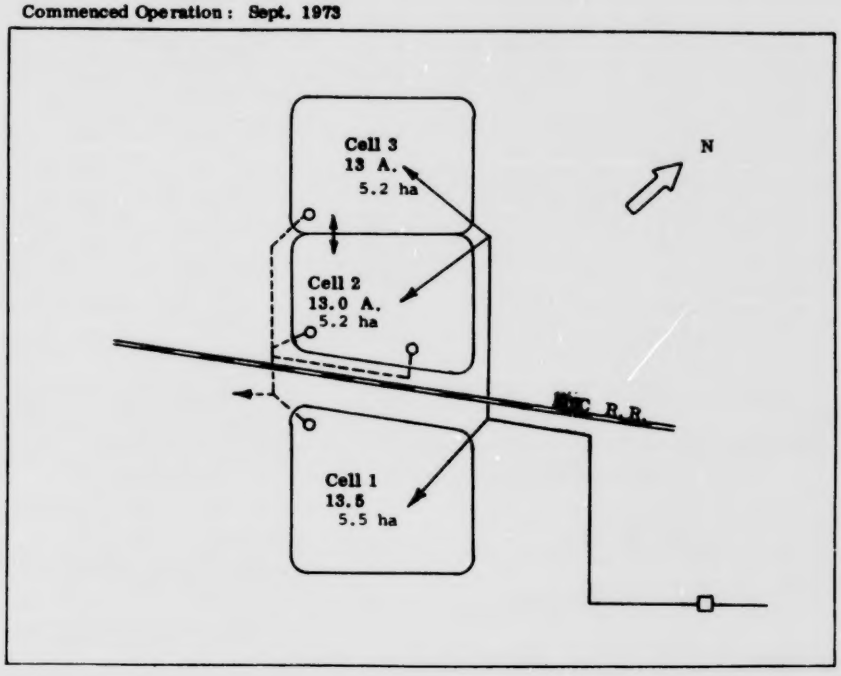
Flow Measurement :

- □ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 875 I gpm 66.2 l/s
Pump 2 : 875 I gpm 66.2 l/s

Total Cap : 875 I gpm 66.2 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001364 RIDGETOWN LAGOON

MUNICIPALITY : RIDGETOWN
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 3,214
POPULATION SERVED : 3,150
PERCENT SERVED : 98.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.591 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/80-DEC/80																
JAN	25.990	.840	.930		*				*				*			
FEB	21.530	.740	.810		235.0				324.0				8.6			
MAR	25.230	.810	1.040		205.0				221.0				11.1			
APR	28.860	.960	1.300	*	*	21.0			*	113.5			*	1.0		
MAY	28.970	.930	1.100		*				*				*			
JUN	25.520	.850	.910		160.0				*				8.3			
JUL	23.440	.770	.890		90.0				*				3.9			
AUG	25.330	.820	.970		124.0				*				5.7			
SEP	25.560	.850	1.000		30.0				*				2.4			
OCT	26.060	.840	.940		28.0				*				2.9			
NOV	21.830	.730	.830	*	*	11.6			*	51.1			*	.4		
DEC	25.080	.810	.950		200.0				55.0				7.6			
TOTAL	303.400							35.7				35.7				1.7
AVERAGE		.829			134.0	16.3	87		200.0	82.3	58		6.3	.7	88	
MAXIMUM			1.300													
NO. OF SAMPLES					5								5			

Waste Stabilization Pond

PROJECT : RODNEY

Cell Acreage : 16 Cell area : 6.5 ha

Total Acreage : 16 Total hectares: 6.5

Commenced Operation : March 1975

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

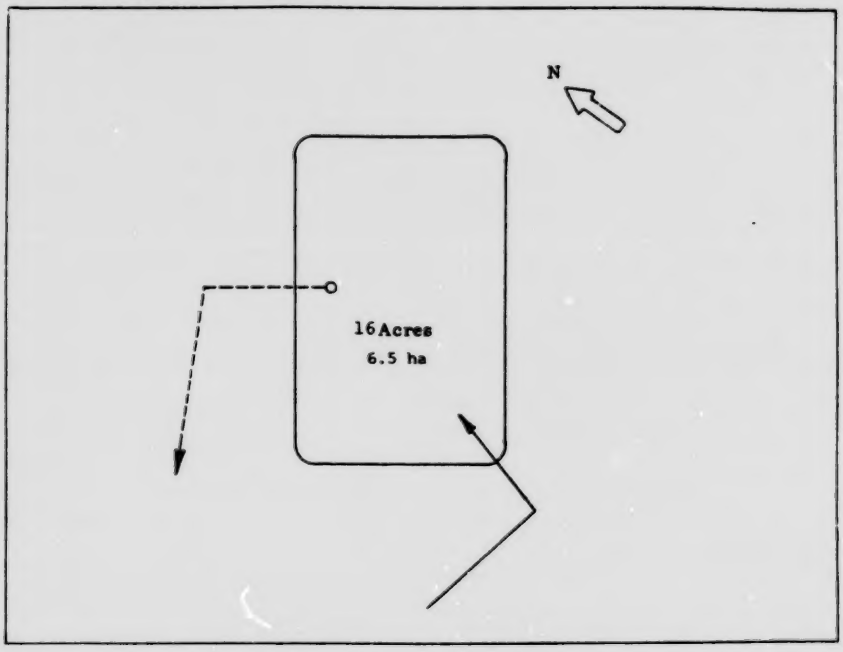
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 520 I gpm 39.4 l/s
Pump 2 : 520 I gpm 39.4 l/s

Total Cap : 520 I gpm
39.4 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001667 RODNEY LAGOON

MUNICIPALITY : RODNEY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,017
POPULATION SERVED : 1,164
PERCENT SERVED : 114.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.545 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><---				---><--- SUSPENDED SOLIDS ---><---				---><--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	11.661	.376	.934		350.0				253.0				7.4			
FEB	9.136	.315	.371		315.0				144.0				8.7			
MAR	10.546	.340	.498		102.0				112.0				6.8			
APR	11.841	.395	.500		289.0				130.0				6.7			
MAY	8.766	.283	.351	97.167	313.0	*			301.0	*			7.1	*		
JUN	10.084	.336	.451		550.0				434.0				14.0			
JUL	9.511	.307	.411		350.0				548.0				11.8			
AUG	8.991	.290	.386		335.0				264.5				9.5			
SEP	9.894	.330	.400		470.0				339.0				8.2			
OCT	9.731	.314	.360		450.0				663.0				14.1			
NOV	9.021	.301	.421	369.644	482.5	31.8	93		279.2	94.4	66		10.8	1.3	87	
DEC	9.873	.318	.425		610.0				266.7				11.6			
TOTAL	119.055			466.811				42.0				25.8				1.0
AVERAGE		.325			384.7	31.8	91		311.2	94.4	69		9.7	1.3	86	
MAXIMUM			.934	369.644												
NO. OF SAMPLES					20	6			20	6			20	6		

Waste Stabilization Pond

PROJECT : SARNIA (BRIGHT'S GROVE)

Cell Acreage :

Total Acreage :

Commenced Operation: Fall 1977

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ● Batch
- ☐ Continuous
- ☐ None

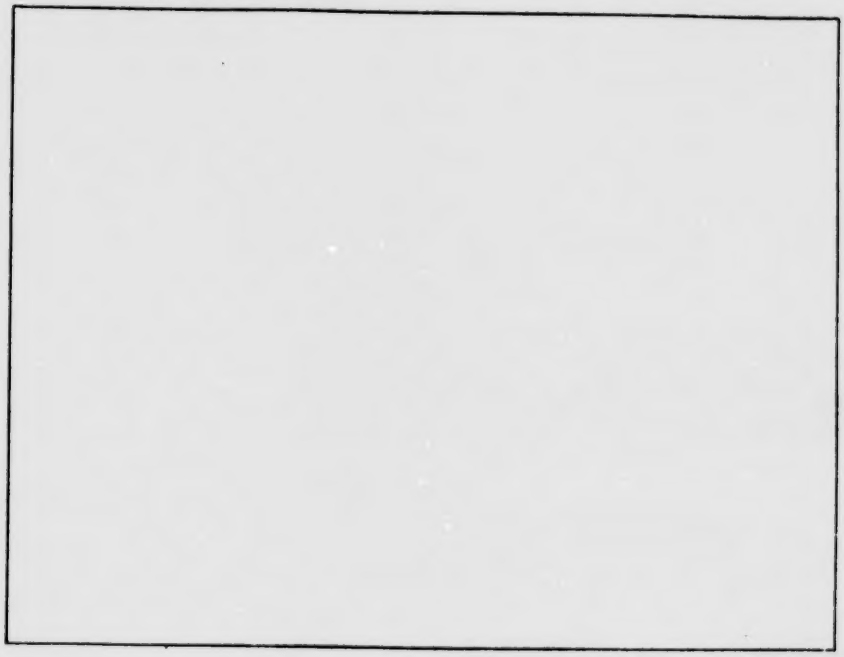
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001989 BRIGHT'S GROVE PV LAGOON (SA POP-2600)

MUNICIPALITY : SARNIA (BRIGHTS GROVE)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,600
POPULATION SERVED : 2,600
PERCENT SERVED :

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4,750 1000 M3 DESIGN BOD5 : 269.0 MG/L DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	16.880	.545	1.340		NO SAMPLES COLLECTED				NO SAMPLES COLLECTED				NO SAMPLES COLLECTED			
FEB	13.300	.460	1.080		NO SAMPLES COLLECTED				NO SAMPLES COLLECTED				NO SAMPLES COLLECTED			
MAR	19.700	.636	1.410		*				*				*			
APR	21.010	.700	1.940	*	82.0	14.8	81		81.0	28.0	65		5.9	2.3	61	
MAY	17.760	.573	.810		84.0				85.0				7.7			
JUN	14.960	.499	.820		INSTRUMENT FAILURE				125.0				8.1			
JUL	14.250	.460	.600		86.0				57.0				6.7			
AUG	15.320	.494	.870		570.0				618.1				11.3			
SEP	13.720	.457	.790		74.0				67.1				6.7			
OCT	16.610	.539	.995		66.3				36.0				7.1			
NOV	13.540	.451	.735		114.0				95.7				8.4			
DEC	10.140	.327	.495		110.0				135.4				8.3			
TOTAL	187.190							25.0				21.8				1.0
AVERAGE		.512			148.2	14.8	90		144.4	28.0	80		7.8	2.3	70	
MAXIMUM			1.940													
NO. OF SAMPLES					10	1			11	1			11	1		

Waste Stabilization Pond

SEAFORTH

384

Cell Acreage : 10.0 + 10.0 + 10.0 — Cell area : 4.0 + 4.0 + 4.0 ha

Total Acreage : 30.0 — Total hectares : 12.0

Commenced Operation : Nov. 1983

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : 1 & 2 parallel series to #3

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other :

Phosphorus Removal.

- ■ Batch
- ☐ Continuous
- ☐ None

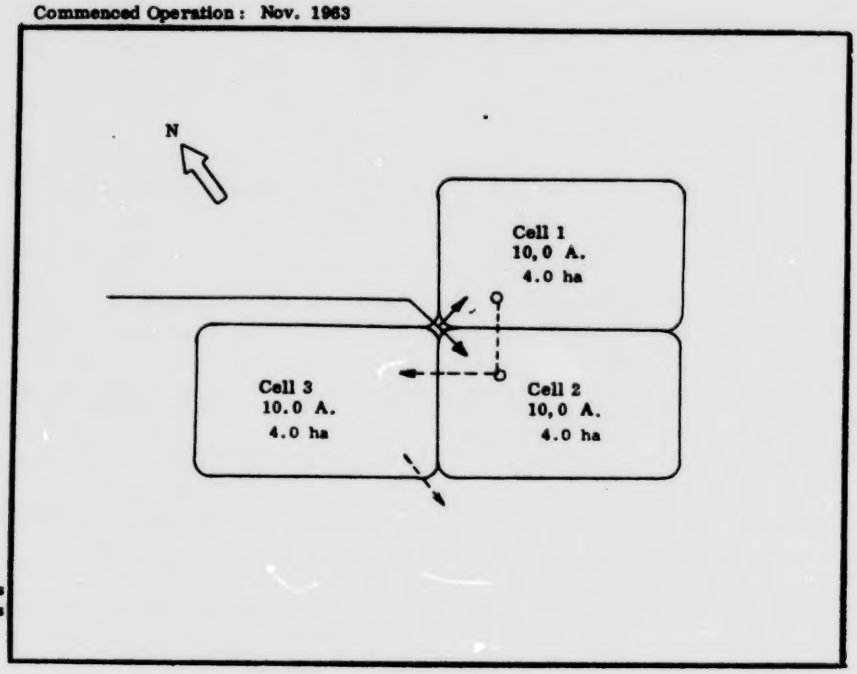
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 828 US gpm 52.2 l/s
Pump 2 : 828 US gpm 52.2 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 00

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001177 SEAFORTH LAGOON

(* DATA NOT AVAILABLE)

MUNICIPALITY : SEAFORTH
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION	:	2,029
POPULATION SERVED	:	2,046
PERCENT SERVED	:	100.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.227 1000 M3 — DESIGN BOD5 : .. — DESIGN SUSP.SOLIDS :

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	BIOCHEMICAL OXYGEN DEMAND INFLUENT MG/L	BOD EFFLUENT MG/L	BOD REDUCTION %	BOD REDUCTION 1000 KG	SUSPENDED SOLIDS INFLUENT MG/L	SS EFFLUENT MG/L	SS REDUCTION %	SS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TP EFFLUENT MG/L	TP REDUCTION %	TP REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	44.180	1.430	2.040		42.0				50.5				3.3			
FEB	32.620	1.120	1.360	*	88.0	8.3	90		123.0	16.5	86		7.4	1.6	78	
MAR	63.030	2.030	6.160	*	70.0	10.4	85		58.0	12.0	79		4.2	1.8	56	
APR	68.710	2.290	5.300	*	49.0	13.1	73		36.0	25.8	28		2.9	.7	74	
MAY	47.340	1.530	2.590		60.0				35.0				3.8			
JUN	38.460	1.280	2.160		38.0				50.0				3.2			
JUL	33.780	1.090	2.180		82.0				113.0				5.6			
AUG	41.260	1.330	4.160		72.0				72.5				2.6			
SEP	32.080	1.070	1.980		19.0				10.5				1.4			
OCT	43.510	1.400	1.710	*	122.0	2.3	98		76.5	5.3	93		5.7	.6	89	
NOV	39.730	1.320	1.840	*	106.0	4.8	95		91.5	9.5	89		6.9	.4	94	
DEC	49.210	1.590	3.010		19.0				19.8				1.7			
TOTAL	533.910							90.0				25.4				1.6
AVERAGE		1.457			63.9	7.7	87		61.3	13.8	77		4.0	1.0	74	
MAXIMUM			6.160													
NO. OF SAMPLES					12	5			12	5			10	5		

Waste Stabilization Pond

PROJECT : SOMBRA TWP (PORT LAMBTON)

Cell Acreage : 12 + 12 — Cell area: 4.9 + 4.9 ha

Total Acreage : 24 — Total hectares: 9.8

Commenced Operation : Nov. 1975

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

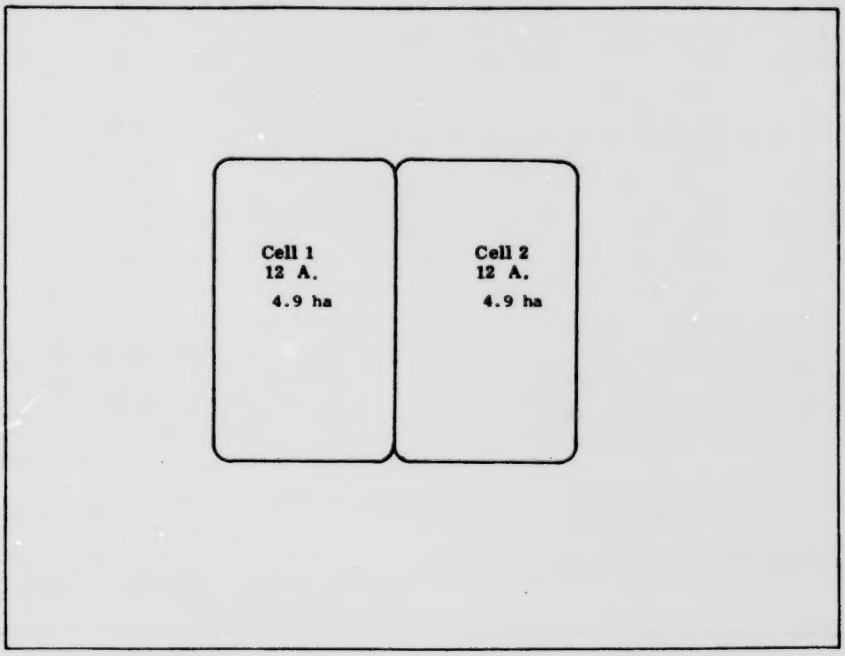
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 500 I gpm 37.9 l/s
Pump 2 : 500 I gpm 37.9 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001694 PORT LAMBTON LAGOON

MUNICIPALITY : SOMBRA (PORT LAMBTON)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 4,258
POPULATION SERVED : 720
PERCENT SERVED : 16.9

(* NO SAMPLES ANALYZED)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT (** DATA NOT AVAILABLE)

DESIGN CAPACITY : 1.068 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	.944	.031	.034		*				*				*			
FEB	.887	.031	.033		120.0				114.0				7.7			
MAR	1.175	.038	.060		110.0				115.0				6.1			
APR	1.198	.040	.052		80.0				71.0				5.8			
MAY	.957	.031	.054		56.0				97.0				6.0			
JUN	1.036	.035	.042		92.0				164.0				8.4			
JUL	.953	.031	.038		72.0				77.0				6.0			
AUG	1.077	.035	.060		56.0				115.3				6.2			
SEP	.869	.029	.035	**	142.0	3.2	97		572.0	3.0	99		14.3	.5	96	
OCT	.934	.030	.033	**	100.0	2.8	97		107.0	5.2	95		6.8	.6	90	
NOV	.775	.026	.031	**	120.0	8.0	93		98.3	17.5	82		7.9	2.4	69	
DEC	1.257	.041	.105		*				*				*			
TOTAL	12.062							1.1				1.7				0.08
AVERAGE		.033			94.8	4.6	95		153.0	8.5	94		7.5	1.2	84	
MAXIMUM			.105													
NO. OF SAMPLES					10	9			10	9			10	9		

Waste Stabilization Pond

PROJECT : SOMBRA TWP (SOMBRA)

Cell Acreage : 12 + 12 — Cell area : 4.9 + 4.9 ha

Total Acreage : 24 — Total hectares : 9.8

Commenced Operation : Nov. 1975

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

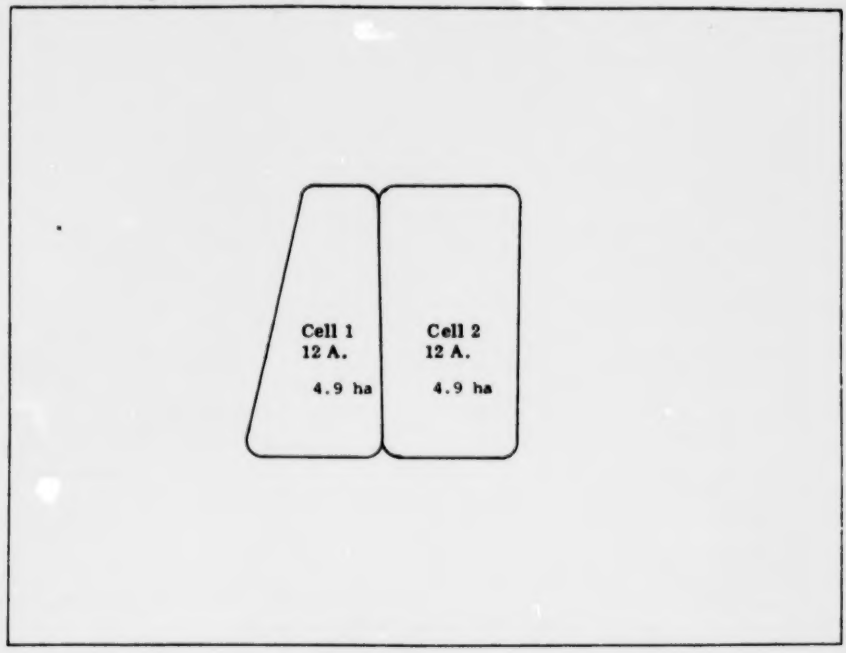
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 500 I gpm 37.9 l/s
Pump 2 : 500 I gpm 37.9 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001685 PORT SOMBRA LAGOON

MUNICIPALITY : SOMBRA (PORT SOMBRA)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 4,258
POPULATION SERVED : 365
PERCENT SERVED : 8.5

(* NO SAMPLES ANALYZED)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

(** DATA NOT AVAILABLE)

DESIGN CAPACITY : 0.895 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	.017	.016	.020		*				*				*			
FEB	.501	.017	.023		290.0				543.0				8.8			
MAR	.705	.023	.048		98.0				69.0				6.9			
APR	.636	.021	.030		68.0				40.0				4.5			
MAY	.553	.018	.030		70.0				76.0				6.3			
JUN	.574	.019	.027		135.0				194.0				9.4			
JUL	.525	.017	.025		140.0				90.0				5.4			
AUG	.511	.017	.027		22.0				221.6				3.6			
SEP	.521	.017	.028	**	92.0	11.2	87		100.7	68.8	31		6.4	1.0	83	
OCT	.532	.017	.018	**	96.0	4.4	95		55.4	44.2	20		6.4	.1	97	
NOV	.452	.015	.023	**	95.0	6.8	92		71.7	21.0	70		7.6	.7	90	
DEC	.586	.019	.030		*				*				*			
TOTAL	6.113							.69				.62				.096
AVERAGE		.018			110.6	7.4	93		146.1	44.6	69		6.5	.6	89	
MAXIMUM			.048													
NO. OF SAMPLES					10	3			10	3			10	3		

Waste Stabilization Pond

PROJECT : TILBURY NORTH TWP.
(STONEY POINT P.V.)

Cell Acreage :

Total Acreage :

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002345 STONEY POINT P V LAGOON (NOV DISCHGE)

MUNICIPALITY : TILBURY NORTH
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 3,201
POPULATION SERVED : 1,157
PERCENT SERVED : 36.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT (* DATA NOT AVAILABLE)

DESIGN CAPACITY : 1.272 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	27.072	.873	1.072		22.0				32.0				2.0			
FEB	15.813	.545	.683		100.0				98.0				7.1			
MAR	30.190	.974	1.837		20.0				9.0				1.5			
APR	32.765	1.092	1.430	28.800	17.0	4.2	75		9.0	4.3	52		1.1	.3	72	
MAY	25.665	.828	1.275		32.0				11.0				1.2			
JUN	28.484	1.676	1.219		8.0				10.0				1.4			
JUL	24.760	.799	1.344		80.0				58.1				5.6			
AUG	34.163	1.102	1.906		11.0				12.8				1.0			
SEP	32.276	1.076	1.781		18.0				16.4				1.6			
OCT	18.422	.594	.773		54.4				59.4				4.6			
NOV	13.544	.451	.488	67.348	8.0	*			4.8	*			1.4	.2	85	
DEC	19.578	.631	.883	111.000	20.0	13.8	31		24.4	43.7	-	-	5.9	.6	89	
TOTAL	302.732			207.148				7.1				1.4				0.8
AVERAGE		.887			32.5	9.0	72		28.7	24.0	16		2.8	.3	87	
MAXIMUM			1.906	111.000												
NO. OF SAMPLES					12	4			12	4			12	6		

Waste Stabilization Pond

PROJECT : TILBURY W. (P.V. COMBER)

Cell Acreage : 6.0 + 6.0 Cell area: 2.4 + 2.4 ha

Total Acreage : 12.0 Total hectares: 4.8

Commenced Operation: JUL 1976

Operation :

- ■ Series single cell discharge
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

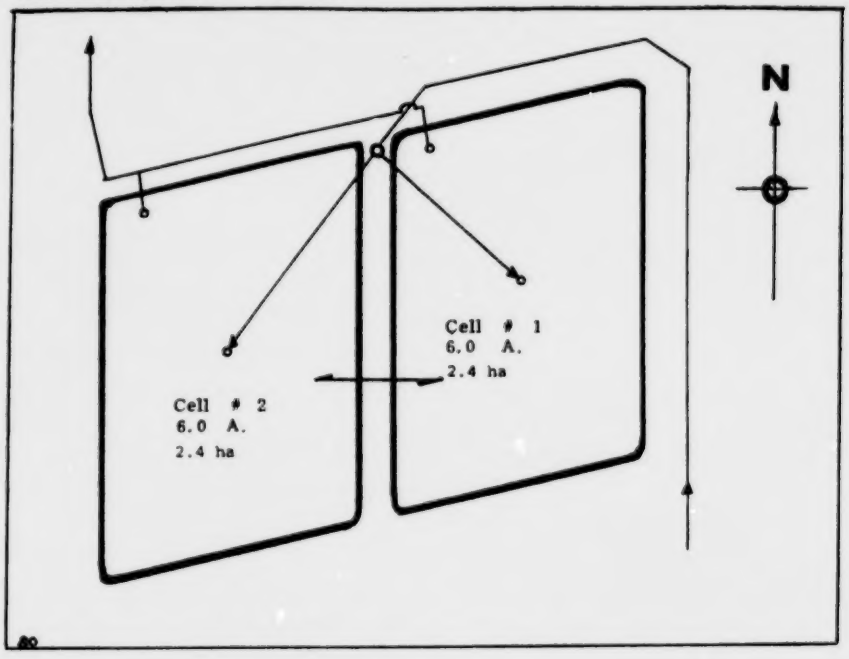
Flow Measurement :

- ■ Flow Meter
- □ Integrater
- □ Pump Timer

Pumping Station

Pump 1 : 170 Igpm 12.9 l/s
Pump 2 : 170 Igpm 12.9 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001676 COMBER LAGOON (CELL 2 DIS NOV/OCT 11 DA

MUNICIPALITY : TILBURY WEST (PV COMBER)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,627
POPULATION SERVED : 985
PERCENT SERVED : 60.5

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.363 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	6.980	.225	.268		*				*				*			
FEB	6.574	.226	.258		*				*				*			
MAR	12.479	.405	.896		*				*				*			
APR	12.032	.401	.673	44.396	76.0	3.0	96		101.0	4.0	96		4.5	.6	86	
MAY	8.727	.282	.573		180.0				198.0				5.4			
JUN	9.301	.309	.650		92.0				104.0				7.9			
JUL	7.188	.232	.782		185.0				121.0				9.0			
AUG	9.814	.317	.936		48.0				36.6				4.1			
SEP	8.135	.271	.355		38.0				34.7				3.9			
OCT	7.026	.227	.245		98.6				102.5				7.1			
NOV	6.455	.215	.227	36.757	155.0	*			192.5	*			6.4	.5	91	
DEC	8.368	.270	.586	.925	136.0	14.2	89		183.7	54.3	70		7.4	1.0	86	
TOTAL	103.079			82.078				10.6				9.3				0.6
AVERAGE		.282			112.0	8.6	92		119.3	29.1	75		6.1	.7	88	
MAXIMUM			.936	44.396												
NO. OF SAMPLES					9	4			9	4			9	10		

Waste Stabilization Pond

PROJECT : WATFORD

Cell Acreage : 15 + 15

Cell area : 6.1 + 6.1 ha

Total Acreage : 30

Total hectares : 12.2

Commenced Operation : N/A

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

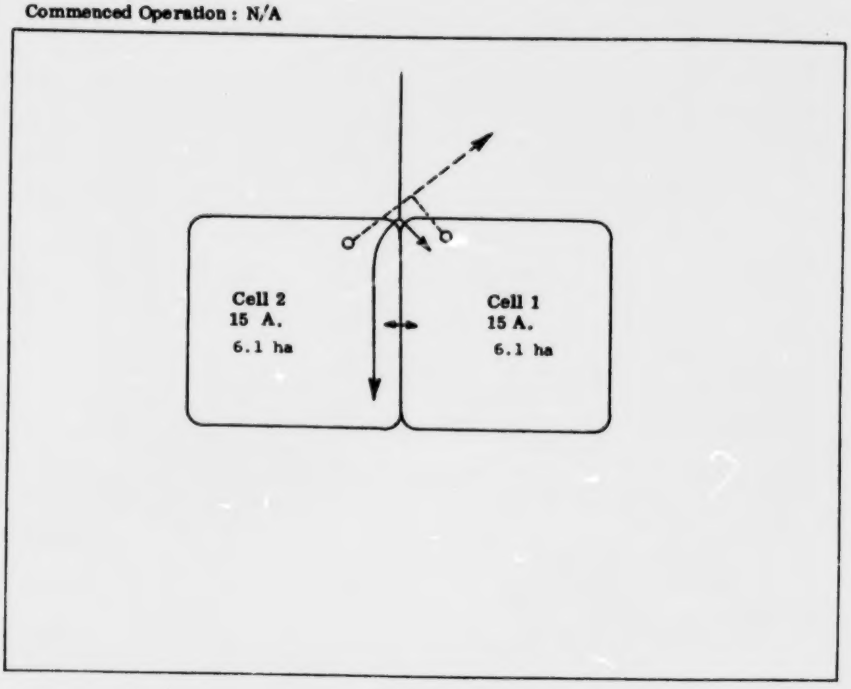
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 525 I gpm 39.7 l/s
Pump : 525 I gpm 39.7 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001809 MATFORD LAGOON

MUNICIPALITY : MATFORD
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

DISCHARGE OCCURS ONLY IN THE FALL

CURRENT POPULATION : 1,413
POPULATION SERVED : 1,400
PERCENT SERVED : 99.0

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

(** NO SAMPLES ANALYZED)

DESIGN CAPACITY : 0.954 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/80-DEC/80																
JAN	21.744	.701	.799		**				**				**			
FEB	19.369	.668	.891		**				**				**			
MAR	23.316	.752	1.177		**				**				**			
APR	22.995	.767	1.343		**				**				**			
MAY	20.887	.674	.767		52.0				60.0				6.6			
JUN	17.842	.595	.735		14.0				38.0				3.6			
JUL	16.416	.530	.740		240.0				185.4				15.7			
AUG	11.380	.367	.719		116.0				89.8				9.7			
SEP	13.119	.437	.666		34.0				16.6				4.7			
OCT	14.244	.459	.655	*	96.0	4.8	95		58.6	10.7	81		8.1	1.5	81	
NOV	12.913	.430	.611	*	85.0	4.0	95		50.3	19.3	61		6.5	8		
DEC	14.063	.454	.860		**				**				**			
TOTAL	208.288							88.0				11.7				1.3
AVERAGE		.570			91.0	4.4	95		71.2	15.0	78		7.8	1.5	80	
MAXIMUM			1.343													
NO. OF SAMPLES					3	2			3	2			3	1		

Waste Stabilization Pond

PROJECT : WEST LORNE

Cell Acreage : 10 + 10 Cell area : 4.0 + 4.0 ha

Total Acreage : 20 Total hectares : 8.0

Commenced Operation : Nov. 1972

Operation :

- [■] Series
- [ ] Parallel
- [ ] Other :

Discharge :

- [■] Seasonal
- [ ] Continuous
- [ ] Annual
- [ ] Other :

Phosphorus Removal:

- [■] Batch
- [ ] Continuous
- [ ] None

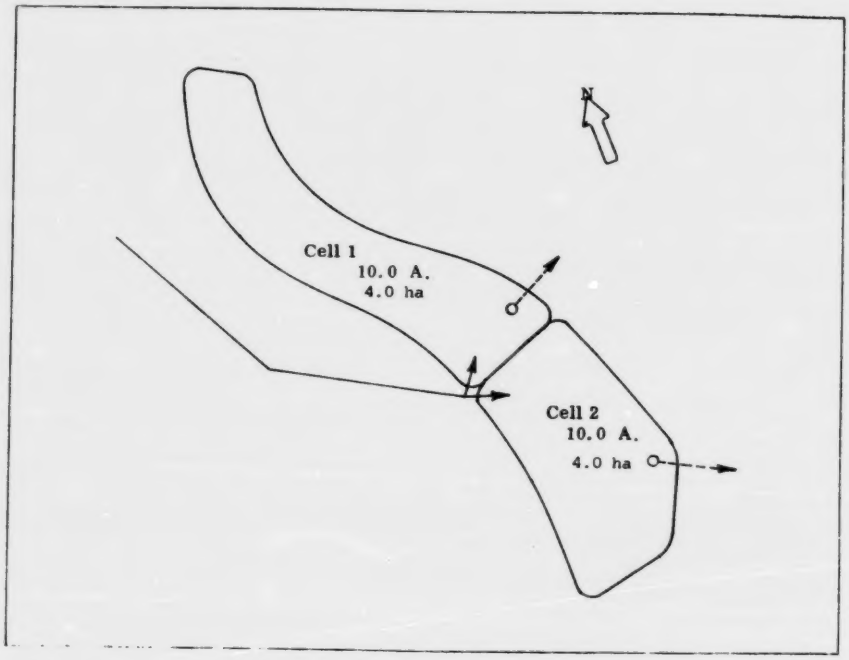
Flow Measurement :

- [■] Flow Meter
- [■] Integrator
- [ ] Pump Timer

Pumping Station

Pump 1 : 467 l gpm 35.4 l/s
Pump 2 : 467 l gpm 35.4 l/s

Total Cap : 467 l gpm
35.4 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001337 WEST LORNE LAGOON

MUNICIPALITY : WEST LORNE
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,256
POPULATION SERVED : 1,180
PERCENT SERVED : 93.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.668 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				--><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	16.840	.543	1.184		28.0				22.0				2.3			
FEB	12.585	.434	.813		60.0				68.0				3.5			
MAR	16.568	.534	1.037	45.641	120.0	5.5	95		328.0	4.5	98		6.7	1.7	74	
APR	18.090	.603	.775	24.711	82.0	8.8	89		64.0	21.7	66		4.1	1.9	52	
MAY	15.417	.497	.939		76.0				103.0				5.6			
JUN	14.677	.489	1.177		30.0				74.0				2.3			
JUL	12.498	.403	.615		64.0				53.0				3.9			
AUG	14.407	.465	.905		220.0				347.3				8.1			
SEP	13.780	.459	.771		34.0				59.0				1.3			
OCT	14.110	.455	.619		71.0				38.4				4.6			
NOV	12.074	.402	.576	84.000	70.0	7.3	89		41.9	9.3	77		5.0	.5	90	
DEC	13.904	.449	.711		130.0				1723.3				4.3			
TOTAL	174.950			154.352				13.1				40.5				0.5
AVERAGE		.478			82.0	7.2	91		243.4	11.8	95		4.3	1.3	68	
MAXIMUM			1.184	84.000												
NO. OF SAMPLES					13	9			13	13			13	13		

Waste Stabilization Pond

PROJECT : ZURICH

Cell Acreage : 6.5 + 6.5 Cell area : 2.6 + 2.6 ha

Total Acreage : 13.0 Total hectares : 5.2

Commenced Operation : Jan. 1974

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

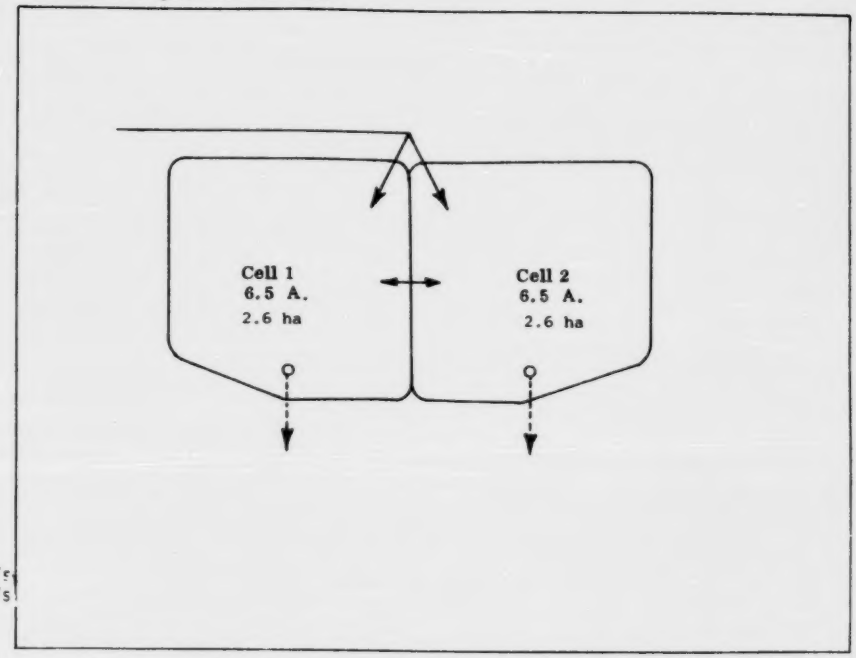
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 300 US gpm 18.9 l/s
Pump 2 : 300 US gpm 18.9 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001444 ZURICH LAGOON

MUNICIPALITY : ZURICH
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 779
POPULATION SERVED : 762
PERCENT SERVED : 97.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	11.031	.356	.472		116.0				170.0				*			
FEB	11.062	.381	.914		142.0				231.0				*			
MAR	12.426	.401	.962		*				*				*			
APR	12.550	.418	.611	*	230.0	15.2	93		350.0	54.0	84		12.3	2.3	80	
MAY	11.329	.365	.514		110.0				149.0				8.8			
JUN	12.220	.407	.855		1700.0				1184.0				43.2			
JUL	10.451	.337	.396		120.0				189.0				7.2			
AUG	11.347	.366	.432		900.0				1265.6				14.8			
SEP	10.829	.361	.436		144.0				257.6				8.6			
OCT	12.860	.414	.813		92.0				102.9				7.5			
NOV	10.410	.347	.400		116.0				122.7				6.7			
DEC	11.501	.377			*				*				*			
TOTAL	138.016							48.6				48.0				1.6
AVERAGE		.378			367.0	15.2	95		402.1	54.0	86		13.6	2.3	82	
MAXIMUM			.962													
NO. OF SAMPLES																

Ministry of the Environment
Ontario

West Central Region

②

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Ministry of the Environment
Ontario

West Central Region

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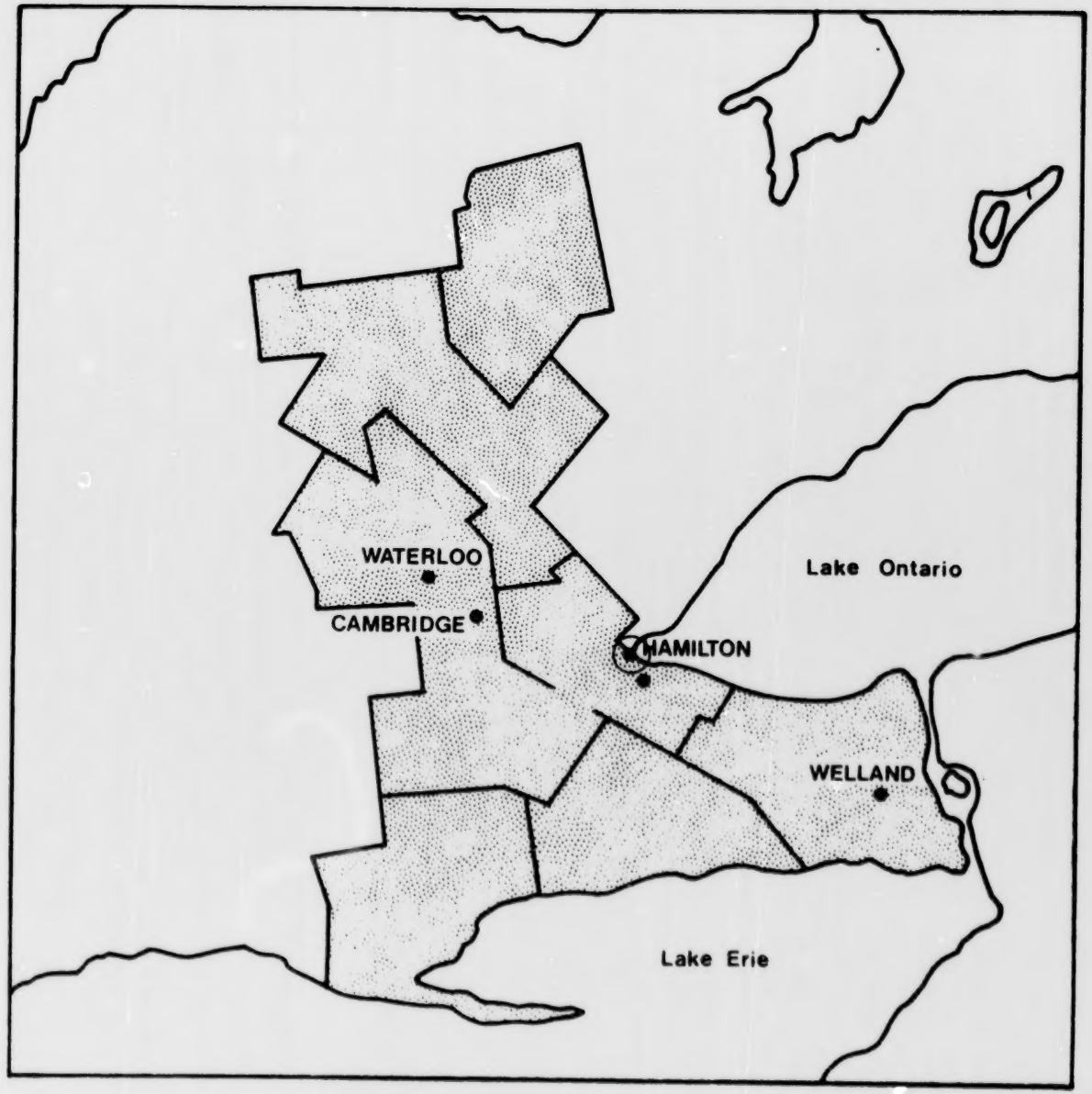


Waste Stabilization Pond

PROJECT : . ARTHUR

Cell Acreage : 4.85 + 4.85 + 7.19 + 11.8 Cell area: 2.0 + 2.0 + 2.9 + 4.8 ha

Total Acreage : 28.7 Total hectares: 11.7

Commenced Operation : (Cell 1 + Cell 2) : 1962
Expansion : (Cell 3) 1972
Expansion : (Cell 4) Nov 1975

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

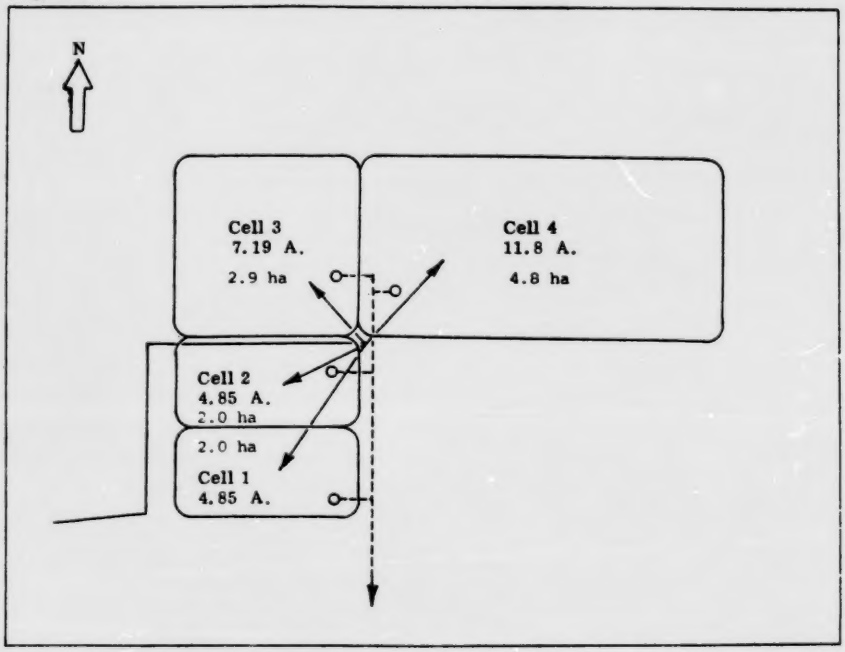
Flow Measurement :

- ☐ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 600 I gpm 45.4 l/s
Pump 2 : 600 I gpm 45.4 l/s

Total Cap : 900 I gpm (Est.)
68.1 l/s (est.)



Signifigant Industries : Bell Threads

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000882 ARTHUR LAGOON

MUNICIPALITY : ARTHUR
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,669
POPULATION SERVED : 150
PERCENT SERVED : 8.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.981 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	23.914	.771			105.0				75.0				4.1			
FEB	17.876	.616			165.0				145.0				6.2			
MAR	23.764	.766			140.0				80.0				8.2			
APR	37.378	1.245		36.890	110.0	18.0	83		80.0	41.0	48		4.6	.5	88	
MAY	26.963	.869		31.870	210.0	16.0	92		345.0	83.0	75		8.0	1.4	81	
JUN	23.251	.775			420.0				815.0				4.0			
JUL	18.058	.582			*				*				12.0			
AUG	18.860	.608			480.0				*				16.0			
SEP	15.997	.533			125.0				140.0				6.3			
OCT	25.389	.819		146.643	86.0	9.2	89		70.0	37.5	46		3.8	.9	73	
NOV	26.481	.882			285.0				330.0				10.0			
DEC	26.890	.867			300.0				385.0				6.1			
TOTAL	284.821			215.403				58.7				54.9				1.8
AVERAGE		.778			220.5	14.4	93		246.5	53.8	78		7.4	.9	86	
MAXIMUM				146.643												
NO. OF SAMPLES					11	14			10	14			12	14		

Waste Stabilization Pond

PROJECT HARRISTON

Cell Acreage : 10 + 10 + 8

Cell area: 4.0 + 4.0 + 3.2 ha

Total Acreage : 28

Total hectares: 11.2

Significant Industries: Canada Packers

Commenced Operation : 1965

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

Flow Measurement :

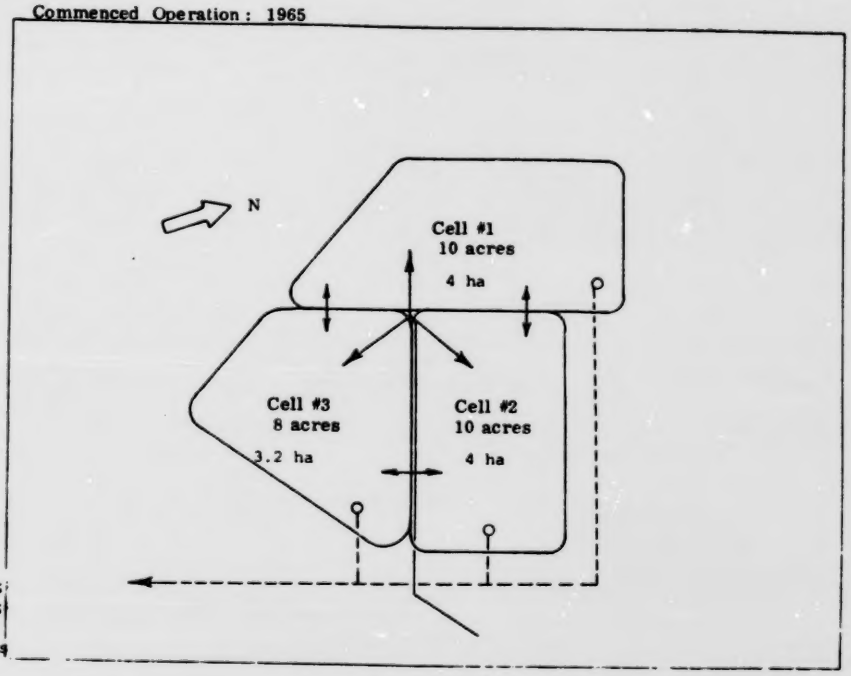
- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 480 US gpm 30.3 l/s

Pump 2 : 480 US gpm 30.3 l/s

Total Cap : 960 US gpm 60.6 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000329 HARRISTON LAGOON

MUNICIPALITY : HARRISTON
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 1,954
POPULATION SERVED : 1,950
PERCENT SERVED : 99.7

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.995 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/80-DEC/80																
JAN	62.899	2.029			56.0				100.0				5.4			
FEB	46.956	1.619			210.0				192.0				15.0			
MAR	78.974	2.547			88.5				132.5				7.6			
APR	82.641	2.754		36.200	*	13.8			*	19.2			*	7.9		
MAY	43.657	1.408		50.620	79.8	22.2	72		232.5	35.8	84		13.4	5.5	58	
JUN	39.739	1.324			*				*				*			
JUL	44.794	1.444			132.5				770.0				91.0			
AUG	42.924	1.384			62.5				367.5				19.0			
SEP	38.593	1.286			230.0				1710.0				35.0			
OCT	50.050	1.614		29.950	79.0	30.0	62		290.0	55.0	81		11.8	4.6	61	
NOV	43.429	1.447		57.090	*	34.5			*	54.5			*	6.7		
DEC	59.045	1.904			135.0				235.0				14.0			
TOTAL	633.701			173.860				59.6				257.7				11.0
AVERAGE		1.730			119.2	25.1	78		447.7	41.1	90		23.5	6.1	73	
MAXIMUM				57.090												
NO. OF SAMPLES					21	18			21	18			21	18		

Waste Stabilization Pond

PROJECT : NANTICOKE (JARVIS)

Cell Acreage : 5 + 7

Cell area : 2.0 + 2.8 ha

Total Acreage : 12

Total hectares : 4.8 ha

Commenced Operation : 1967

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

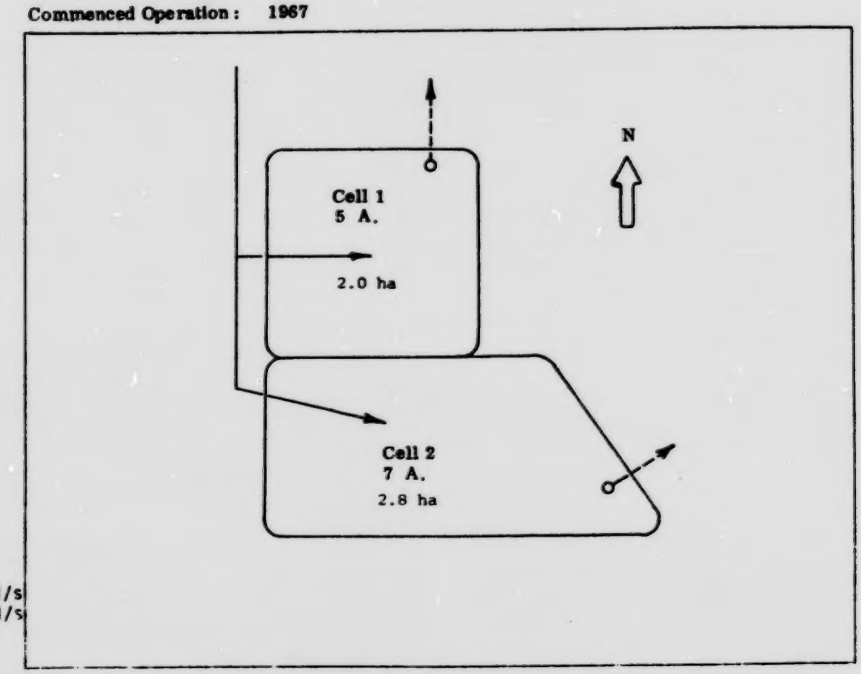
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 325 US gpm 20.5 l/s
Pump 2 : 325 US gpm 20.5 l/s

Total Cap : 650 US gpm
41.0 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 120001434 NANTICOKE (JARVIS)

MUNICIPALITY : NANTICOKE (JARVIS)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 18,829
POPULATION SERVED :
PERCENT SERVED :

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 0.545 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
					INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION	
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG	MG/L	MG/L	%	1000 KG
JAN/80-DEC/80																
JAN	17.496	.564	1.800		100.0				174.0				7.2			
FEB	13.014	.448	.810		260.0				223.0				9.2			
MAR	20.440	.659	.970		60.0				56.0				3.8			
APR	22.410	.747	1.080	*	66.0	20.3	69		80.0	47.0	41		3.0	.4	83	
MAY	16.902	.545	.864		165.0				188.0				8.2			
JUN	22.274	.742	1.180		115.0				155.5				8.9			
JUL	24.358	.785	.864		140.0				113.0				7.6			
AUG	16.590	.550	.700		170.0				229.5				8.0			
SEP	17.064	.569	.810		*				104.8				4.8			
OCT	16.480	.531	.594	*	100.0	7.2	92		57.4	14.3	75		6.1	.4	93	
NOV	14.160	.472	1.000		325.0				139.5				8.3			
DEC	15.900	.512	.650		*				*				*			
TOTAL	217.088							29.6				23.4				1.4
AVERAGE		.594			150.1	13.7	90		138.2	30.6	77		6.8	.4	93	
MAXIMUM			1.800													
NO. OF SAMPLES					11	23			12	31			12	31		

376

Waste Stabilization Pond

PROJECT : NORFOLK TWP
(PORT ROWAN)

Cell Acreage : 10 + 10

Cell area: 4.0 + 4.0 ha

Total Acreage : 20

Total hectares: 8.0

Commenced Operation: Dec. 1972

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

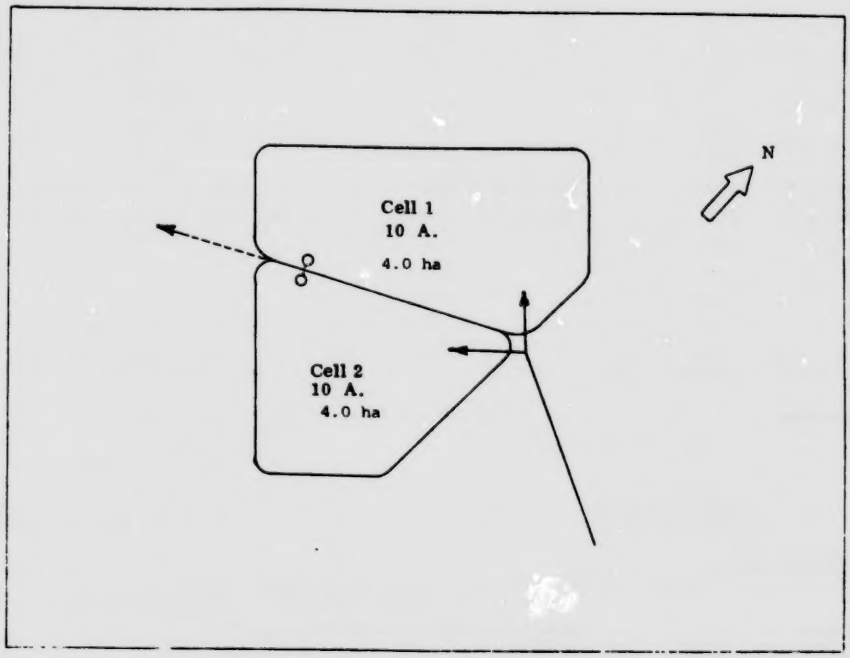
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 312 I gpm 23.6 l/s
Pump 2 : 312 I gpm 23.6 l/s

Total Cap : 600 I gpm
45.4 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001113 PORT ROMAN LAGOON

MUNICIPALITY : NORFOLK (PORT ROMAN)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 10,980
POPULATION SERVED : 750
PERCENT SERVED : 6.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT (* DATA NOT AVAILABLE)

DESIGN CAPACITY : 0.727 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	7.009	.226	.281		50.0				75.0				4.0			
FEB	6.223	.215	.246		*				*				*			
MAR	8.475	.274	.375		220.0				265.0				7.8			
APR	9.000	.300	.488	*	*	2.8			*	9.3			*	.2		
MAY	8.285	.267	.351		*				*				*			
JUN	8.235	.274	.488		*				*				*			
JUL	8.986	.290	.457		*				*				*			
AUG	8.762	.282	.372		*				*				*			
SEP	7.588	.253	.300		*				*				*			
OCT	7.817	.252	.316		*				*				*			
NOV	7.381	.246	.319		*				*				*			
DEC	8.440	.272	.387		*				*				*			
TOTAL	96.201							12.7				15.4				0.5
AVERAGE		.263			135.0	2.8	97		170.0	9.3	94		5.9	.2	96	
MAXIMUM			.488													
NO. OF SAMPLES					2	6			2	6			2	6		

397

Waste Stabilization Pond

PROJECT : TWP WILMOT
(NEW HAMBURG)

Cell Acreage : 14 + 13.4 Cell area : 5.7 + 5.4 ha

Total Acreage : 27.4 Total hectares: 11.1

Commenced Operation (Cell 1): July 1962
Expansion (Cell 2) Sept 1969

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

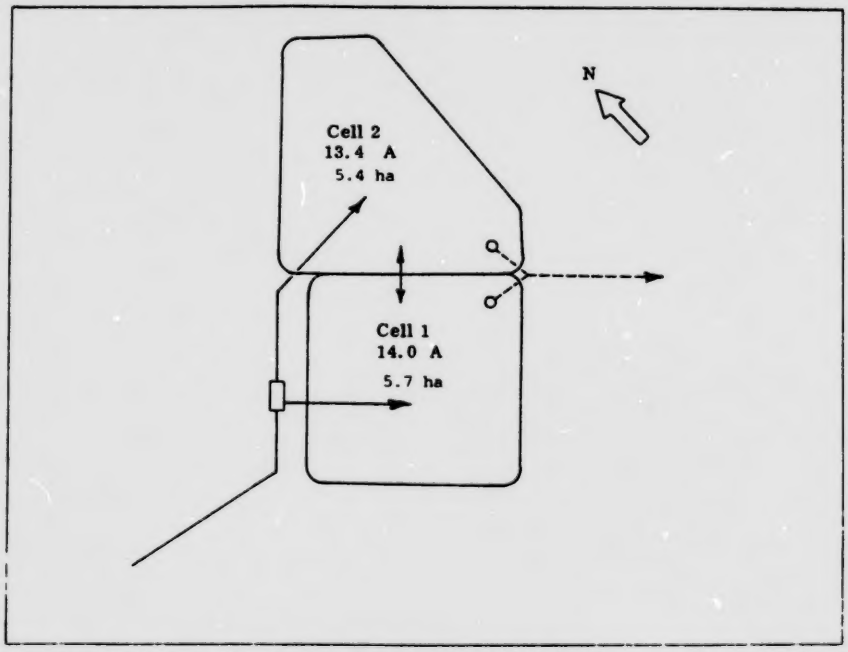
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 600 I gpm 45.4 l/s
Pump 2 : 600 I gpm 45.4 l/s

Total Cap : N/A



Signifigant Industries : Hahn Brass, Klassen Bronz, Oak Grove Creamery, Co-op Hatchery Ontario Drive and Gear, Felt Boot.

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000506 NEW HAMBURG LAGOON

MUNICIPALITY : WILMOT (NEW HAMBURG)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 10,731
POPULATION SERVED : 4,000
PERCENT SERVED : 37.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.272 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><—				<— SUSPENDED SOLIDS —><—				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/80-DEC/80																
JAN	39.680	1.280	3.260		197.0				270.0				22.8			
FEB	29.245	1.008	1.257		170.0				292.5				8.7			
MAR	43.792	1.413	3.390		102.0				180.0				6.3			
APR	48.950	1.630	3.170	148.700	197.5	18.4	90		167.5	21.8	86		7.8	1.5	80	
MAY	40.068	1.292	1.750	109.400	200.0	18.5	90		455.0	79.5	82		10.9	1.9	82	
JUN	39.905	1.330	1.570		89.5				187.5				7.4			
JUL	30.430	.982	2.190		100.0				165.0				8.4			
AUG	29.028	.936	1.470		147.5				257.5				9.7			
SEP	29.742	.991	1.500		102.5				160.0				6.5			
OCT	31.893	1.030	1.350		137.0				252.5				5.7			
NOV	29.170	.970	1.240		176.5				335.0				12.0			
DEC	36.591	1.180	2.180	95.340	88.0	19.0	78		202.5	23.3	88		5.5	5.5		
TOTAL	428.494			353.440				53.0				86.6				2.7
AVERAGE		1.170			142.2	18.6	86		243.7	41.5	82		9.3	2.9	68	
MAXIMUM			3.390	148.700												
NO. OF SAMPLES					24	25			24	25			24	26		

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

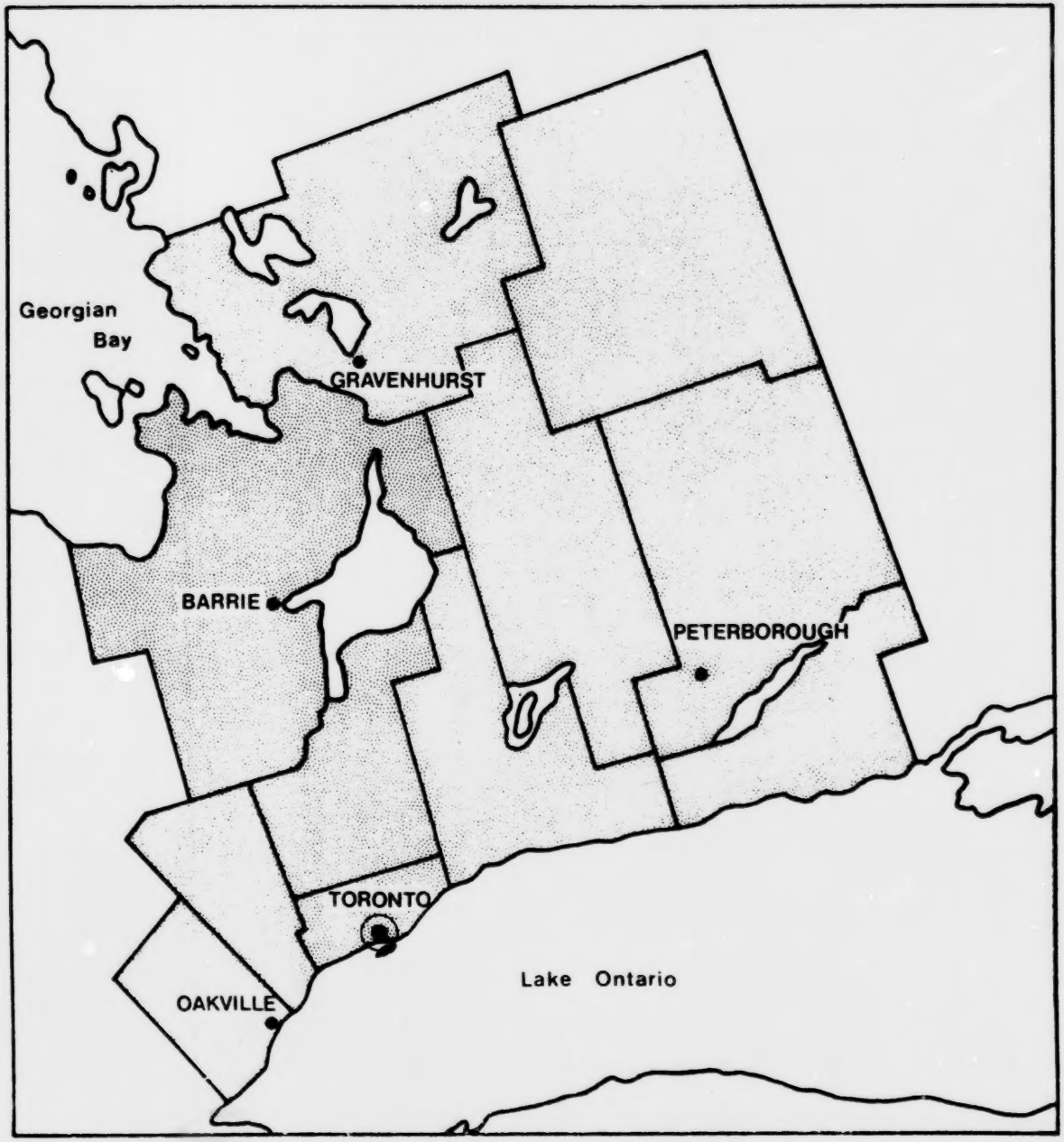
SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386

Ministry of the Environment
Ontario

Central Region

③



Waste Stabilization Pond

PROJECT : BEETON

Cell Acreage : 6.0 + 8.8

Total Acreage : 14.8 Acres

Cell Area: 2.4 + 3.6 ha

Total hectares: 6.0

Commenced operation November 1968

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

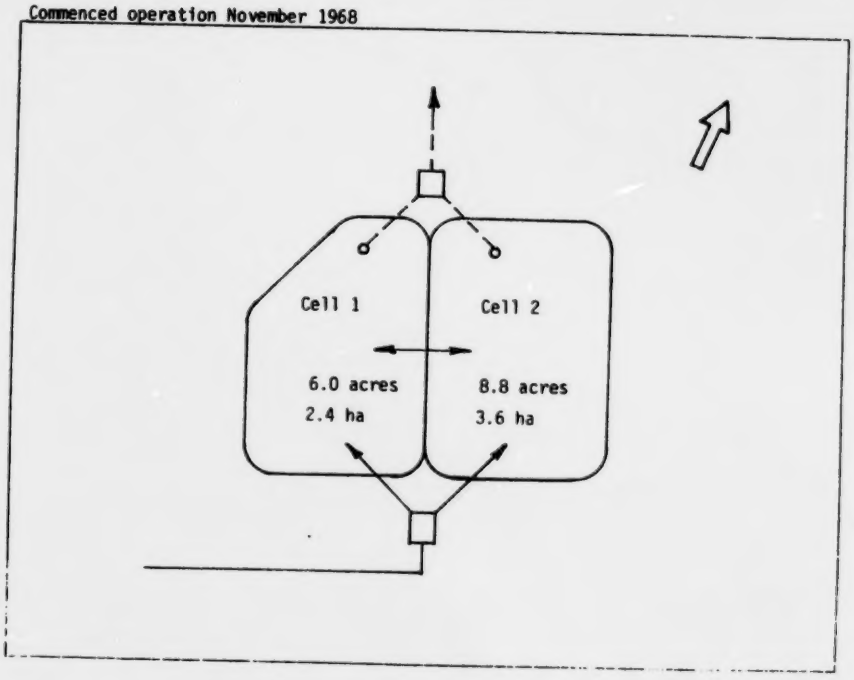
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 300 I gpm 22.7 l/s
Pump 2 : 300 I gpm 22.7 l/s

Total Cap : 420 I gpm



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000917 BEETON LAGOON

MUNICIPALITY : BEETON
REGION : 03 CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL SERIES OPERATION

CURRENT POPULATION : 1,658
POPULATION SERVED : 1,260
PERCENT SERVED : 75.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.363 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	24.437	.788	1.190		78.0				102.0				8.0			
FEB	17.621	.608	.754		143.0				372.0				8.5			
MAR	22.160	.739	.969		62.0				150.0				6.1			
APR	34.138	1.138	1.813		42.0				83.0				3.1			
MAY	22.840	.788	1.272		74.0				113.0				6.3			
JUN	19.896	.663	.819		101.0				145.0				5.8			
JUL	25.894	.835	1.636		150.0				210.0				8.7			
AUG	30.546	.985	2.347		75.0				135.0				7.9			
SEP	27.389	.912	2.347		82.0				140.0				5.5			
OCT	27.442	.885	1.073		30.0				125.0				5.5			
NOV	24.062	.802	.882		70.0				205.0				10.0			
DEC	29.411	.948	1.378		45.0				110.0				6.9			
TOTAL	305.836															
AVERAGE		.841			79.3				157.5				6.8			
MAXIMUM			2.347													
NO. OF SAMPLES					18				18				17			

382

Waste Stabilization Pond

PROJECT : HAVELOCK

Cell Acreage : 8.2 + 10.8

Total Acreage : 19.0

Cell Area: 3.3 + 4.4 ha

Total hectares: 7.7

Commenced Operation: OCT 1975

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

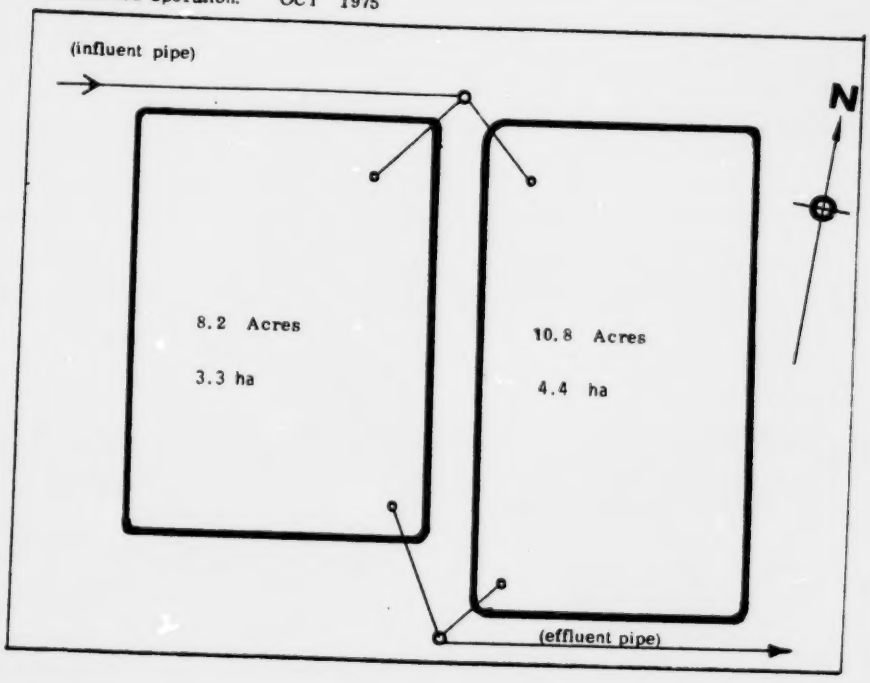
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap. :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001765 HAVELOCK LAGOON

MUNICIPALITY : HAVELOCK
REGION : 03 CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,236
POPULATION SERVED : 1,257
PERCENT SERVED : 101.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.590 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	17.765	.573	.682	*	*				*				*			
FEB	16.174	.558	.614	*	*				85.0				8.1			
MAR	23.838	.736	1.670	*	*				*				*			
APR	20.603	.687	.850	*	52.0	*			100.0	*			5.1	*		
MAY	20.420	.659	.805	*	155.0	*			290.0	*			17.0	*		
JUN	17.314	.577	.736	*	135.0				120.0				6.6			
JUL	16.305	.526	.659	*	115.0				160.0				*			
AUG	16.526	.533	.705	*	115.0	*			160.0	*			*	*		
SEP	14.682	.489	.568	*	*	*			*	*			*	*		
OCT	13.279	.428	.673	*	*				*				*			
NOV	14.646	.488	.568	*	160.0				230.0				9.2			
DEC	17.028	.549	.805	*	140.0				178.0				6.9			
TOTAL	208.580															
AVERAGE		.567			124.5				165.3				8.8			
MAXIMUM			1.670													
NO. OF SAMPLES					8				9				7			

403

Waste Stabilization Pond

PROJECT : LAKEFIELD

Cell Acreage : 20.0 + 18.0 Cell area: 8.1 + 7.3 ha

Total Acreage : 38.0 Total hectares: 15.4

Commenced Operation 1971

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

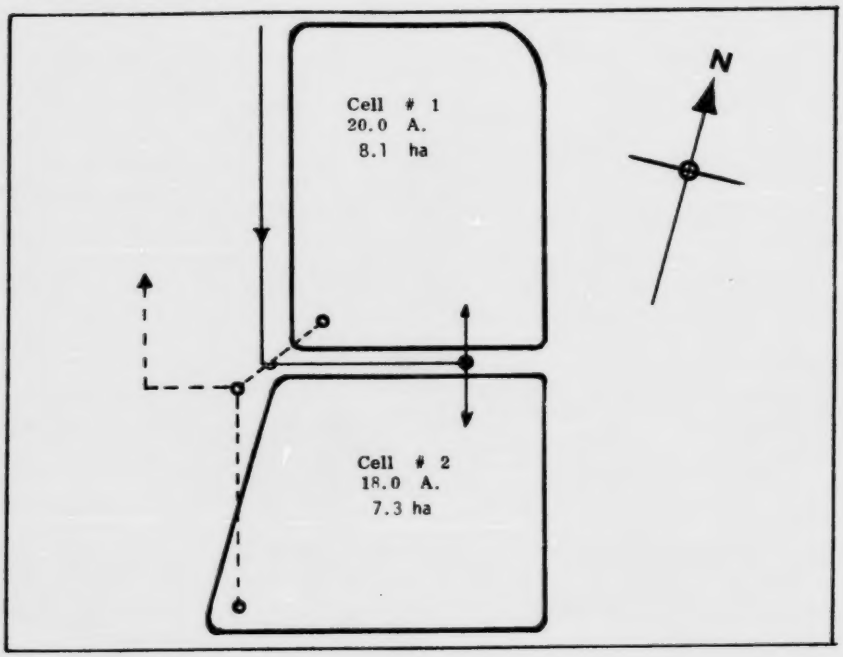
- ■ Batch
- ☐ Continuous
- ☐ None

Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 760 Igpm 57.5 l/s
Pump 2 : 760 Igpm 57.5 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001462 LAKEFIELD LAGOON

MUNICIPALITY : LAKEFIELD
REGION : 03 CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,266
POPULATION SERVED : 2,177
PERCENT SERVED : 96.0

OPERATIONAL SWITCH TO MUNICIPAL IN 1980

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.091 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	1000 KG
JAN/80-DEC/80																
JAN	35.195	1.135	1.590		110.0				125.0				6.9			
FEB	24.278	.837	1.053		88.0				105.0				8.0			
MAR	34.790	1.122	2.032		88.0				105.0				8.0			
APR	48.126	1.604	2.575		48.0				85.0				5.3			
MAY																
JUN																
JUL																
AUG																
SEP																
OCT																
NOV																
DEC																
TOTAL	142.389															
AVERAGE		1.175			83.5				105.0				7.0			
MAXIMUM			2.575													
NO. OF SAMPLES					4				4				4			

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Ministry of the Environment
Ontario

Southeastern Region

④

Waste Stabilization Pond

PROJECT : CASSELMAN

Cell Acreage : 20.1 + 20.1

Cell Area : 8.13 + 8.13ha

Total Acreage : 40.2

Total Hectares : 16.26

Commenced Operation: November 1977

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

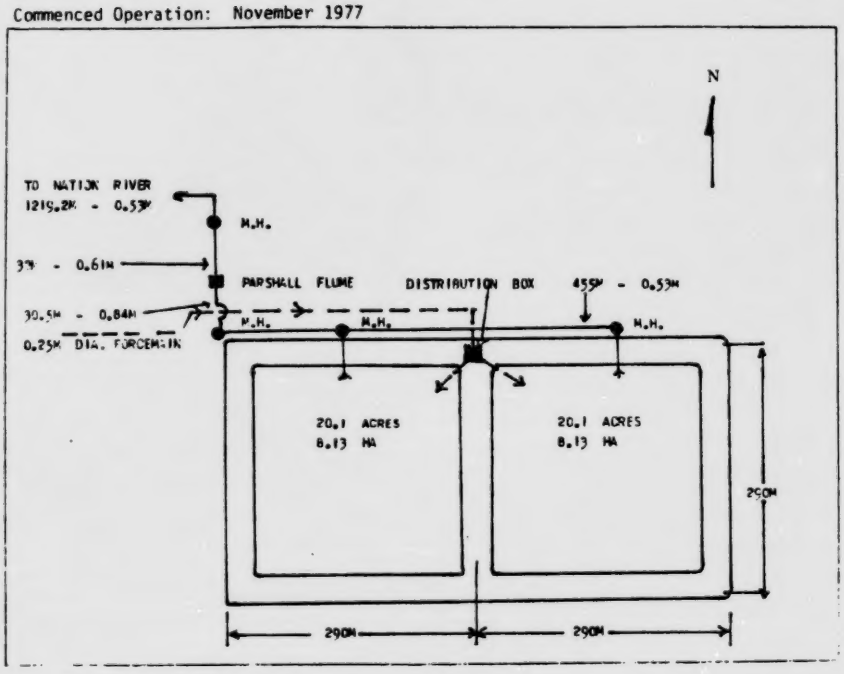
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1: 950 I gpm 72 l/s
Pump 2: 950 I gpm 72 l/s

Total Cap: 950 I gpm 72 l/s
(100% standby)



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002201 CASSELMAN LAGOON

MUNICIPALITY : CASSELMAN
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 1,585
POPULATION SERVED : 1,650
PERCENT SERVED : 104.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.363 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	17.050	.550	.740		183.0				215.0				8.5			
FEB	13.950	.480	.560		167.5				122.5				7.2			
MAR	17.300	.560	.930		112.5				185.0				6.7			
APR	18.130	.600	.720	278.600	157.0	17.5	88		202.5	27.6	86		6.0	1.0	83	
MAY	17.220	.560	.620		109.5				187.5							
JUN	13.350	.450	.530		250.0				277.5				9.7			
JUL	14.410	.460	.620		208.3				393.3				11.9			
AUG	15.500	.500	.560		142.5				87.5				7.2			
SEP	18.200	.610	.780		31.0				29.5				5.6			
OCT	19.400	.630	.750	62.070	103.5	2.0	98		120.0	15.3	87		7.3	.7	90	
NOV	21.680	.720	.830	63.840	52.5	1.2	97		97.5	19.0	80		5.6	.6	88	
DEC	22.190	.720	.860		109.0				247.5				7.0			
TOTAL	208.380			404.510				26.8				33.3				1.4
AVERAGE		.570			135.5	6.9	94		180.4	20.6	88		7.5	.7	89	
MAXIMUM			.930	278.600												
NO. OF SAMPLES					21	15			21	15			19	19		

Waste Stabilization Pond

PROJECT : CHESTERVILLE

Cell Acreage : 14.5
Total Acreage : 14.5

Cell area: 5.9 ha
Total hectares: 5.9

Commenced Operation : Nov. 1970

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

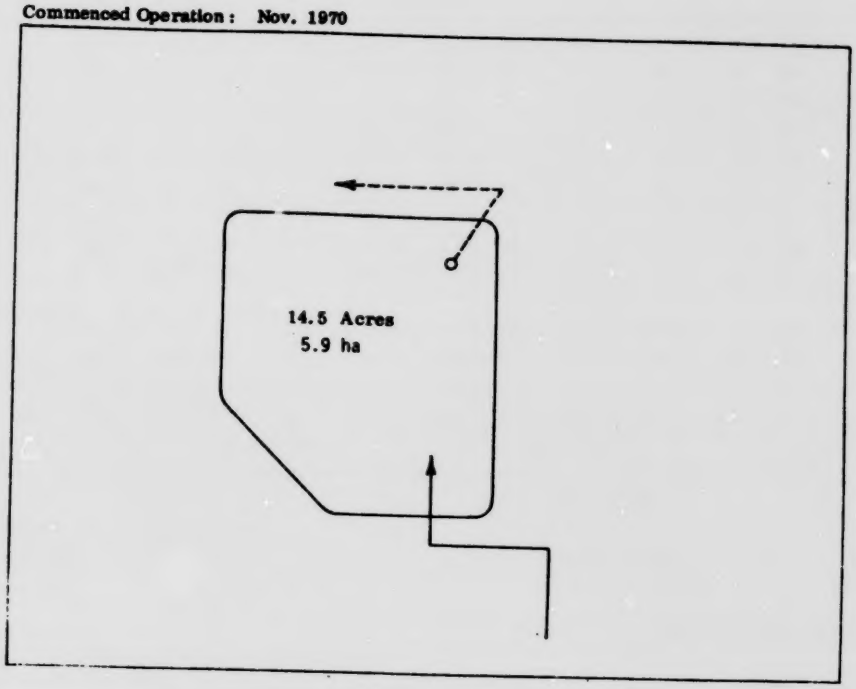
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 320 I gpm 24.2 l/s
Pump 2 : 320 I gpm 24.2 l/s

Total Cap : 430 I gpm
32.6 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000114 CHESTERVILLE LAGOON

MUNICIPALITY : CHESTERVILLE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,423
POPULATION SERVED : 1,400
PERCENT SERVED : 98.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.727 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

DATE JAN/80-DEC/80	FLOW DATA: TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	BIOCHEMICAL OXYGEN DEMAND: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	SUSPENDED SOLIDS: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	TOTAL PHOSPHORUS: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN	21.850	.704	.842		57.0				51.0				3.7			
FEB	14.860	.512	.940		75.0				63.0				6.2			
MAR	25.940	.837	1.694		*				*				*			
APR	34.130	1.138	1.613	*	10.0	14.0	-	-	21.0	20.0	4		1.8	2.9	-	-
MAY	21.210	.707	.883	*	56.0	37.0	33		51.0	90.0	-	-	4.2	2.6	38	
JUN	15.198	.507	.550		80.0				115.0				4.8			
JUL	15.540	.504	.840		104.0				125.0				5.4			
AUG	14.470	.466	.527		195.0				370.0				8.0			
SEP	17.550	.605	.765		65.0				60.0				4.4			
OCT	20.834	.672	1.045		70.0				90.0				6.8			
NOV	22.632	.808	1.008	*	30.0	8.0	73		50.0	8.3	83		3.1	2.5	19	
DEC	27.983	.967	1.468	*	28.0	13.0	53		58.0	21.0	63		1.8	4.0	-	-
TOTAL	252.197							13.1				15.4				0.4
AVERAGE		.702			70.0	18.0	74		95.8	34.8	63		4.5	3.0	33	
MAXIMUM			1.694													
NO. OF SAMPLES					13	10			13	10			13	10		

Waste Stabilization Pond

PROJECT : ERNESTOWN TWP (AMHERSTVIEW)

Cell Acreage : 7.5 + 15.5 + 13.2 + 7.5

Total Acreage : 44.2

Commenced Operation: Sept. 1967
4th Cell Added : Aug. 1973

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

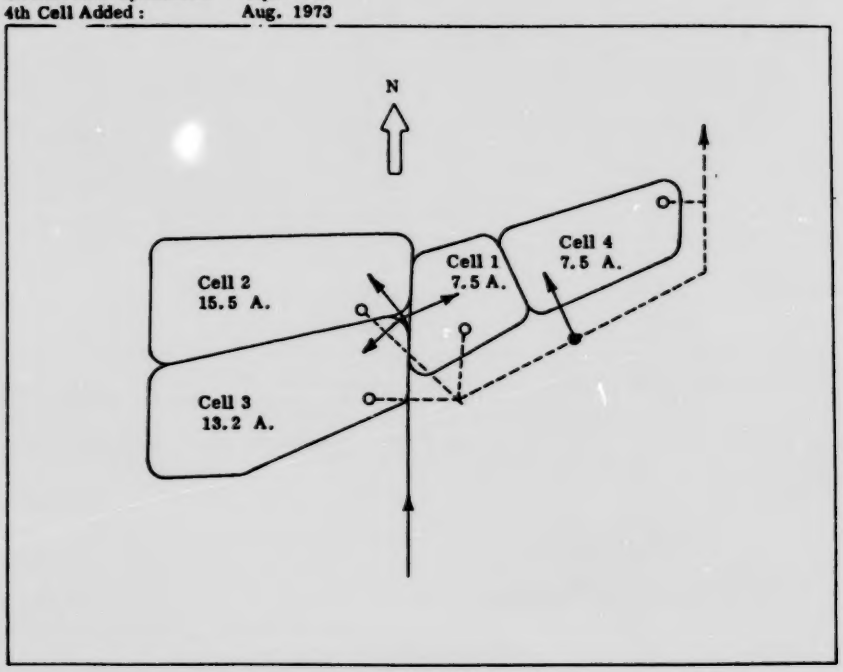
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 750 I gpm
Pump 2 : 750 I gpm

Total Cap : 1000 I gpm



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000196 AMHERSTVIEW LAGOON

MUNICIPALITY : ERNESTOWN(AMHERSTVIEW)
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 11,211
POPULATION SERVED : 6,500
PERCENT SERVED : 57.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.391 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	99.930	3.230	3.482		67.5	9.5	85	5.7	19.0	25.0	-	-	3.3	2.9	12	.040
FEB	77.275	2.665	3.299		60.3	25.6	57	2.6	71.6	25.0	65	3.6	805.8	4.6	99	61.907
MAR	92.669	2.989	3.775													
APR	129.745	4.325	6.438		115.0	28.0	75	11.2	185.0	53.0	71	17.1	7.7	3.0	61	.610
MAY	91.535	2.953	3.231		89.0	18.0	79	6.4	95.0	61.0	35	3.1	4.9	1.8	63	.284
JUN	62.361	2.079	3.111		86.0	29.0	66	3.5	100.0	75.0	25	1.5	6.0	2.4	60	.224
JUL	105.787	3.412	5.223		94.0	26.0	72	7.1	75.0	90.0	-	-	5.1	3.0	41	.222
AUG	68.415	2.359	4.000		103.0	22.0	78	5.5	111.0	83.3	24	1.8	6.7	3.4	49	.226
SEP	67.859	2.262	3.964		110.5	25.0	77	5.8	94.5	115.0	-	-	6.7	2.9	56	.257
OCT	62.914	2.029	5.132		109.0	30.8	71	4.9	172.5	61.3	64	6.9	7.7	2.8	63	.308
NOV	60.670	2.022	3.666		87.0	4.0	95	5.0	113.0	11.3	89	6.1	8.5	2.1	74	.386
DEC	73.860	2.380	4.582		44.0	3.5	92	2.9	125.0	9.5	92	8.5	1.9	4.5	-	-
TOTAL	993.020							61.3				48.9				64.464
AVERAGE		2.725			87.7	20.1	77		105.6	55.4	47		78.5	3.0	96	
MAXIMUM			6.438													
NO. OF SAMPLES					32	30			32	30			32	30		

Waste Stabilization Pond

PROJECT : GOULBOURN TWP. (RICHMOND)

Cell Acreage : 11 + 12.5 + 12.5 Cell area: 4.4 + 5.1 + 5.1 ha

Total Acreage : 36.0 Total hectares: 14.6

Commenced Operation: May 1971

First Expansion: Added 12.5 acres May 1973 5.1 ha

Second Expansion : Added 12.5 acres Jan. 1975 5.1 ha

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

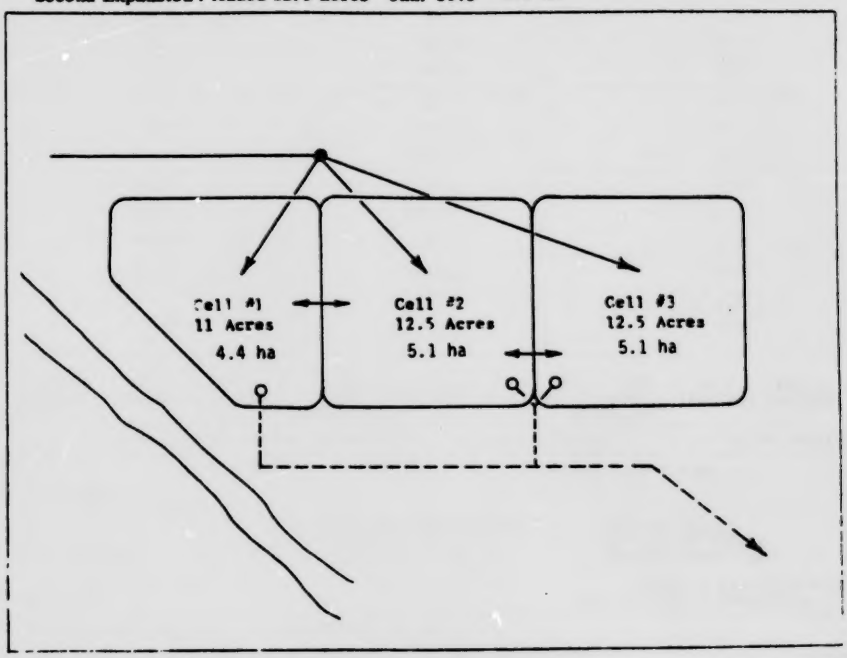
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 480 I gpm 36.3 l/s
Pump 2 : 480 I gpm 36.3 l/s

Total Cap : N/A



Signifigant Industries: NIL

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001140 RICHMOND LAGOON

MUNICIPALITY : GOULBOURN (RICHMOND)
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 9,327
POPULATION SERVED : 3,100
PERCENT SERVED : 33.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.409 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	51.000	1.600	1.800		73.0				123.0				5.8			
FEB	39.500	1.360	1.400		100.0				110.0				6.8			
MAR	68.200	2.200	2.200	*	37.5	18.8	49		65.0	28.3	56		5.3	2.7	48	
APR	72.000	2.400	2.400	*	134.5	22.0	83		311.0	21.3	93		5.5	1.2	77	
MAY	71.300	2.300	2.300		61.0				57.0				4.8			
JUN	26.305	.876	1.073		90.0				125.0				4.0			
JUL	26.411	.880	.946		100.0				130.0				7.1			
AUG	28.344	.888	.956		122.0				130.0				6.4			
SEP	30.962	1.043	1.200		143.0				122.5				7.0			
OCT	35.800	1.150	1.900	*	86.0	10.5	87		125.0	17.5	86		6.3	1.3	78	
NOV	47.950	1.600	1.800	*	73.0	5.8	92		122.5	14.1	88		4.5	.6	84	
DEC	51.125	1.650	2.037		90.5				122.5				7.1			
TOTAL	548.897							43.0				59.4				2.4
AVERAGE		1.496			92.5	14.2	84		128.6	20.3	84		5.8	1.5	74	
MAXIMUM			2.400													
NO. OF SAMPLES					22	19			22	19			20	19		

Waste Stabilization Pond

PROJECT : LANCASTER

Cell Acreage : 17.1 + 8.9

Total Acreage : 26

Cell area: 6.9 + 3.6 ha

Total hectares: 10.5

Commenced Operation: December 1977

Operation :

- ■ Series
- ■ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

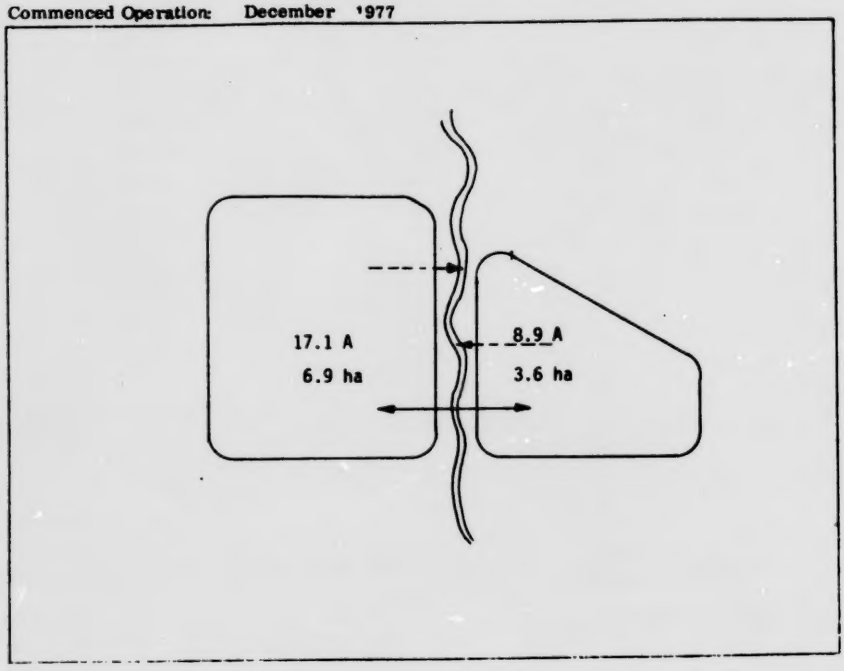
Flow Measurement :

- □ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001925 LANCASTER LAGOON

MUNICIPALITY : LANCASTER
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 587
POPULATION SERVED : 600
PERCENT SERVED : 102.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.590 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	10.575	.341	.515		54.0				80.0				3.8			
FEB	9.290	.320	.708		110.0				115.0				7.4			
MAR	9.370	.302	.426		315.0				470.0				10.0			
APR	18.603	.602	.849	*	130.0	*			720.0	*			2.8	*		
MAY	13.465	.434	.534		570.0				2060.0				12.0			
JUN	9.038	.301	.446		104.0				110.0				8.0			
JUL	8.950	.288	.359		122.0				520.0				7.0			
AUG	9.390	.302	.391		92.0				105.0				5.6			
SEP	13.660	.455	.663	*	36.0	*			35.0	*			2.3	*		
OCT	14.238	.459	.615		90.0				105.0				5.6			
NOV	14.990	.499	.741		80.0				115.0				5.0			
DEC	14.650	.473	.616		25.0				33.0				1.9			
TOTAL	146.219															
AVERAGE		.398			144.0				372.3				5.9			
MAXIMUM			.849													
NO. OF SAMPLES					12				12				12			

Waste Stabilization Pond

PROJECT : MADOC

Cell Acreage : 15 + 15 Cell area: 6.1 + 6.1 ha

Total Acreage : 30 Total hectares: 12.2

Commenced Operation : Sept. 1972

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

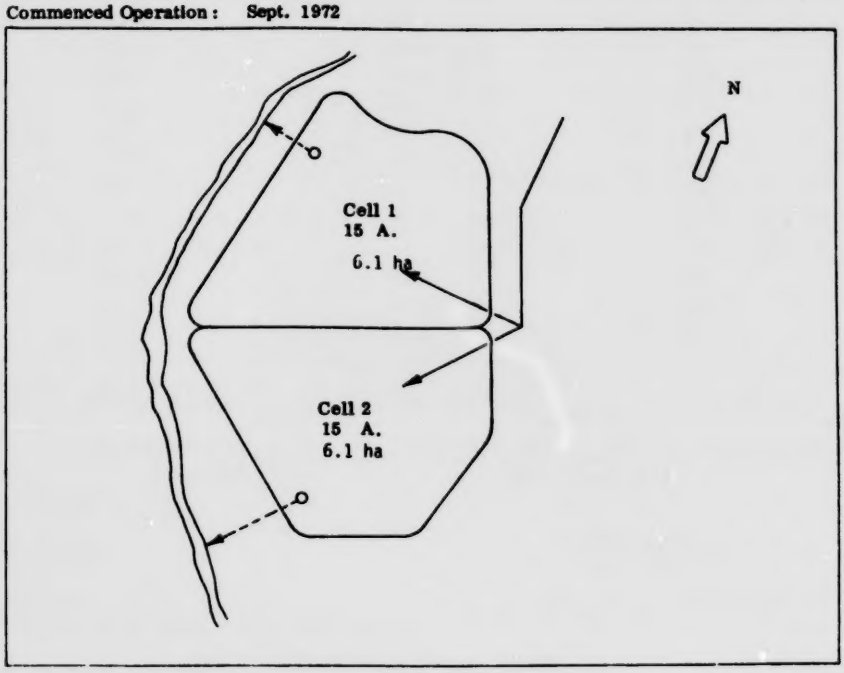
Flow Measurement :

- ■ Flow Meter (Parshall Flume)
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 : (GRAVITY FLOW)

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001051 MADOC LAGOON

MUNICIPALITY : MADOC
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,240
POPULATION SERVED : 2,600
PERCENT SERVED : 209.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.363 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	31.491	1.015			82.0				145.0				10.0			
FEB	19.415	.669			126.0				120.0				6.5			
MAR	46.083	1.487		*	80.0	3.0	96		103.0	10.0	90		5.5	.3	94	
APR	51.760	1.725		*	59.0	13.4	77		68.0	10.4	84		3.0	.5	83	
MAY	36.969	1.192			69.0	4.0	94		183.0	13.0	92		5.6	.3	94	
JUN	20.093	.669			75.0				100.0				5.4			
JUL	19.668	.634			179.0				575.0				5.1			
AUG	11.341	.365			131.0				100.0				5.3			
SEP	10.267	.342			*				*				*			
OCT	13.643	.440		*	95.0	4.0	95		105.0	13.0	87		9.1	.9	90	
NOV	12.706	.423		*	212.0	9.3	95		580.0	12.6	97		16.0	.5	96	
DEC	21.834	.704			101.0				69.0				5.0			
TOTAL	295.270							90.5				54.8				1.9
AVERAGE		.805			109.9	6.7	93		195.2	11.8	93		6.9	.5	92	
MAXIMUM																
NO. OF SAMPLES					19	14			19	14			19	14		

Waste Stabilization Pond

PROJECT : PLANTAGENET

Cell Acreage : 17 Acres
Total Acreage : 17 Acres

Cell area: 6.8 ha
Total hectares: 6.8

Commenced Operation: Spring 1977

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

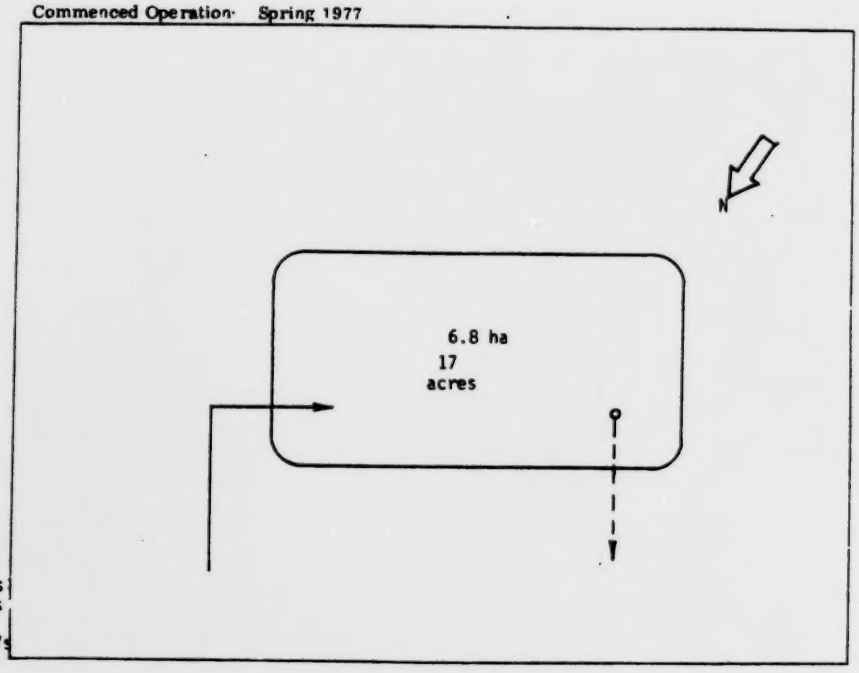
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 430 I gpm 32.6 l/s
Pump 2 : 430 I gpm 32.6 l/s

Total Cap : 860 I gpm 65.1 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001621 PLANTAGENET LAGOON

MUNICIPALITY : PLANTAGENET
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 949
POPULATION SERVED : 950
PERCENT SERVED : 100.1

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.718 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	12.210	.394	.583		203.0				158.0				11.2			
FEB	9.115	.314	.349		152.5				150.0				8.9			
MAR	20.864	.673	2.359		117.5				67.5				6.5			
APR	20.736	.691	1.813	*	60.4	21.0	65		63.6	16.7	73		5.0	3.1	38	
MAY	15.940	.514	.623	*	79.0	20.0	74		62.5	22.0	64		5.6	2.3	58	
JUN	11.327	.378	.554		119.0				148.0				6.0			
JUL	10.924	.352	.531		68.0				85.0				5.4			
AUG	13.368	.431	.775		142.0				145.0				5.4			
SEP	13.823	.460	.537		109.5				120.0				6.9			
OCT	15.427	.498	.892		122.0				180.0				6.7			
NOV	14.949	.498	.615		65.0				85.0				6.2			
DEC	21.646	.698	1.770		167.5				102.5				5.7			
TOTAL	180.329							17.4				17.1				0.7
AVERAGE		.492			117.1	20.5	82		113.9	19.3	82		6.6	2.7	59	
MAXIMUM			2.359													
NO. OF SAMPLES					35	14			35	14			35	14		

Waste Stabilization Pond

PROJECT : ROCKLAND

Cell Acreage : 19.8 Cell area: 8.0 ha

Total Acreage : 19.8 Total hectares: 8.0

Commenced Operation : 1964

Operation :

- ☐ Series
- ☐ Parallel (SINGLE CELL)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

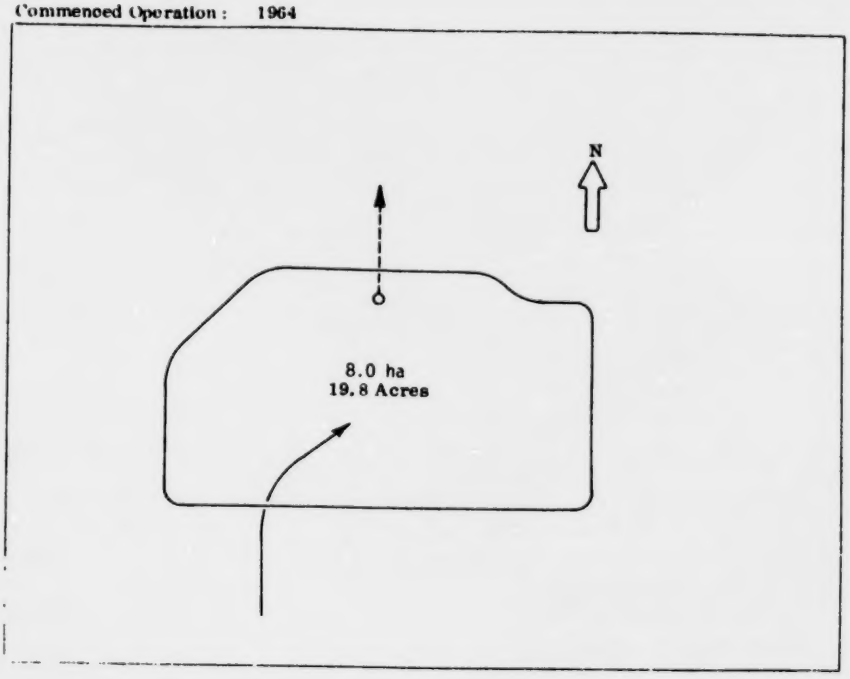
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 693.65 I gpm 52.5 l/s
Pump 2 : 657.10 I gpm 49.7 l/s

Total Cap : 1080 I gpm 81.8 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001159 ROCKLAND LAGOON

MUNICIPALITY : ROCKLAND
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 4,040
POPULATION SERVED : 1,250
PERCENT SERVED : 30.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	30.208	.974	1.173		20.8				23.5				4.0			
FEB	21.747	.750	.880		66.7				78.7				6.3			
MAR	31.900	1.029	2.133		55.0				73.0				5.7			
APR	44.110	1.537	2.087	*	48.0	15.0	68		65.8	24.0	63		4.0	3.2	20	
MAY	31.826	1.027	1.477		40.0				60.0				4.3			
JUN	27.974	.932	2.358		60.0				52.5				5.6			
JUL	30.834	.995	2.001		69.0				43.5				4.7			
AUG	28.735	.926	1.055		92.5				92.5				4.1			
SEP	26.765	.811	1.039		48.0				33.5				4.6			
OCT	29.262	.944	1.434		37.0				41.5				2.7			
NOV	30.688	1.023	1.168		37.5				55.0				1.9			
DEC	34.930	1.126	1.344		75.5				87.5				4.0			
TOTAL	368.979							14.4				12.8				0.4
AVERAGE		1.006			54.1	15.0	72		58.9	24.0	59		4.3	3.2	26	
MAXIMUM			2.358													
NO. OF SAMPLES					32	8			32	8			32	8		

Waste Stabilization Pond

PROJECT : . RUSSELL TOWNSHIP

Cell Acreage :

Total Acreage :

Commenced Operation: August 1979

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

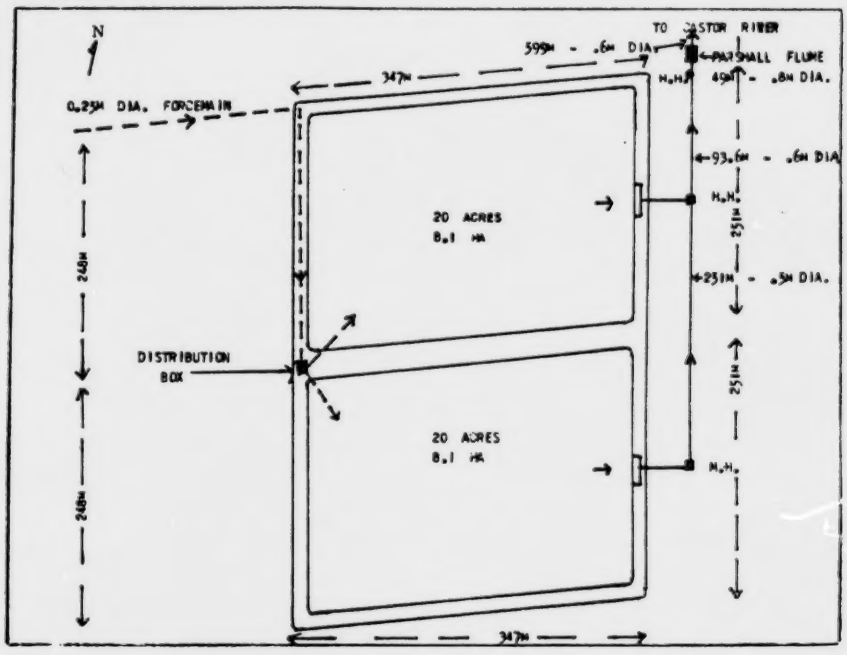
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1: 720 I gpm 54.5 l/s
Pump 2: 720 I gpm 54.5 l/s

Total Cap: 720 Igpm 54.5 l/s
(100% standby)



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001514 RUSSELL P.V. LAGOON (START JUL 79)

MUNICIPALITY : RUSSELL
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION	5,380
POPULATION SERVED	800
PERCENT SERVED	14.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.772 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/80-DEC/80																
JAN	2.440	.080	.100		516.7				1210.0				12.0			
FEB	2.900	.060	.070		317.5				190.0				15.0			
MAR	3.000	.100	.240		225.0				145.0				10.0			
APR	3.720	.120	.190		332.5				355.0				10.3			
MAY	4.370	.140	.230		170.5				210.0				9.0			
JUN	3.210	.110	.140		200.0				210.5				9.5			
JUL	3.460	.110	.140		324.0				540.0				14.0			
AUG	3.310	.110	.150		235.0				100.0				9.0			
SEP	3.290	.110	.140		307.5				225.0				13.0			
OCT	3.510	.110	.160		162.5				137.5				9.1			
NOV	3.390	.110	.140		171.0				120.0				9.0			
DEC	3.986	.129	.210		170.0				85.0				7.5			
TOTAL	40.586															
AVERAGE		.107			261.0				294.0				10.6			
MAXIMUM			.240													
NO. OF SAMPLES					25				25				25			

Waste Stabilization Pond

PROJECT: ST. ISIDORE DE PRESCOTT

Cell Acreage: 12.6 + 9.5 + 12.3

Total Acreage: 34.4

Cell Area: 5.1 + 3.8 + 5.0 ha

Total Hectares: 13.9

Commenced Operation: June 1977

Operation:

- ☐ Series
- ■ Parallel
- ☐ Other:

Discharge:

- Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other:

Phosphorus Removal:

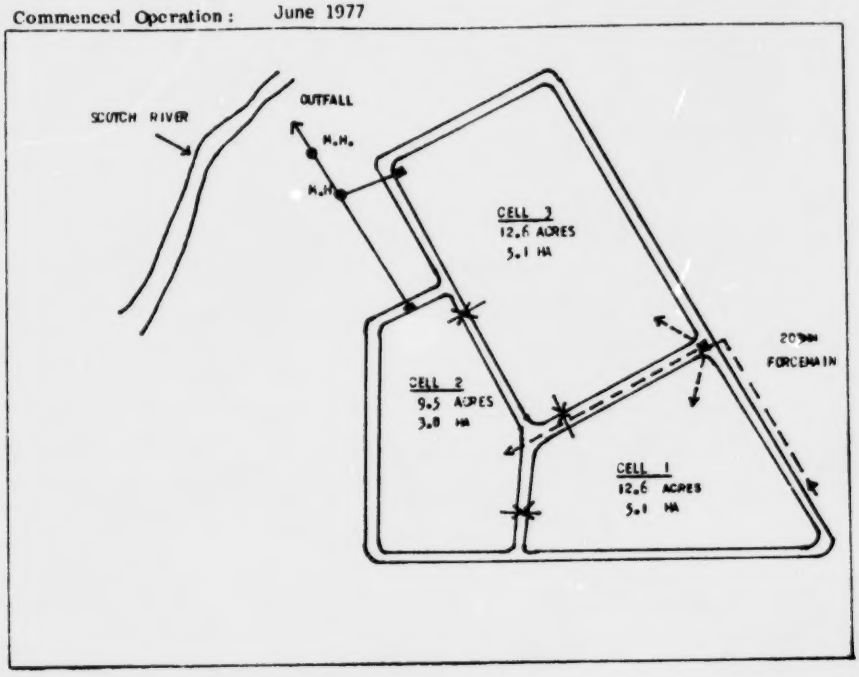
- ☐ Batch
- ☐ Continuous
- ■ None

Flow Measurement:

- ■ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1: 400 I gpm 30.3 l/s
Pump 2: 400 I gpm 30.3 l/s
Total Cap: 400 I gpm 30.3 l/s (100% standby)



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002210 ST. ISIDORE LAGOON

MUNICIPALITY : ST. ISIDORE DE PRESCOTT
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 743
POPULATION SERVED : 750
PERCENT SERVED : 100.9

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.654 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA —>				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG REDUCTION	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG REDUCTION	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG REDUCTION
JAN/80-DEC/80																
JAN	5.650	.180	.210		132.0				70.0				8.8			
FEB	4.870	.170	.220		242.5				145.0				11.4			
MAR	6.020	.190	.250		133.0				110.0				12.0			
APR	6.810	.230	.310	*	370.0	2.0	99		640.0	12.5	98		15.5	.5	96	
MAY	6.190	.200	.240		377.5				692.5				12.9			
JUN	5.590	.190	.210		227.5				150.0				9.1			
JUL	7.320	.240	.390		251.6				233.3				10.9			
AUG	7.320	.240	.490		230.0				145.0				7.6			
SEP	6.090	.200	.270		132.5				92.5				8.9			
OCT	6.520	.210	.290		245.0				172.5				10.1			
NOV	6.350	.210	.250		180.0				92.5				9.7			
DEC	6.590	.210	.260		256.0				117.5				10.4			
TOTAL	75.320							17.3				15.8				0.8
AVERAGE		.206			231.4	2.0	99		221.7	12.5	94		10.6	.5	94	
MAXIMUM			.490													
NO. OF SAMPLES					22	2			22	2			22	2		

Waste Stabilization Pond

PROJECT : STIRLING

418

Cell Acreage : 7.0 + 5.6 Cell area: 2.8 + 2.3 ha

Total Acreage : 12.6 Acres Total hectares: 5.1

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

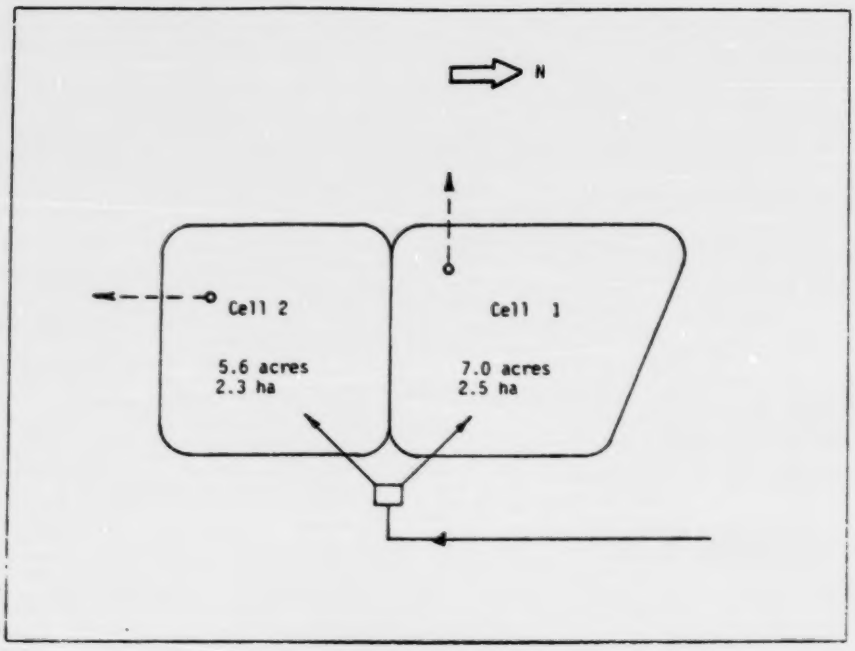
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 350 I gpm 26.5 l/s
Pump 2 : 350 I gpm 26.5 l/s

Total Cap : 700 I gpm 53.0 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000686 STIRLING LAGOON

MUNICIPALITY : STIRLING
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,556
POPULATION SERVED : 2,100
PERCENT SERVED : 134.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.136 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA —>			<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN																
FEB																
MAR																
APR																
MAY																
JUN																
JUL																
AUG																
SEP																
OCT																
NOV																
DEC																
TOTAL																
AVERAGE																
MAXIMUM																
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : TWEED

Cell Acreage : 15.6 + 15.2 Cell Area: 6.3 + 6.2 ha

Total Acreage : 30.8 Ac. Total hectares: 12.5

Commenced Operation : Mar. 1976

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

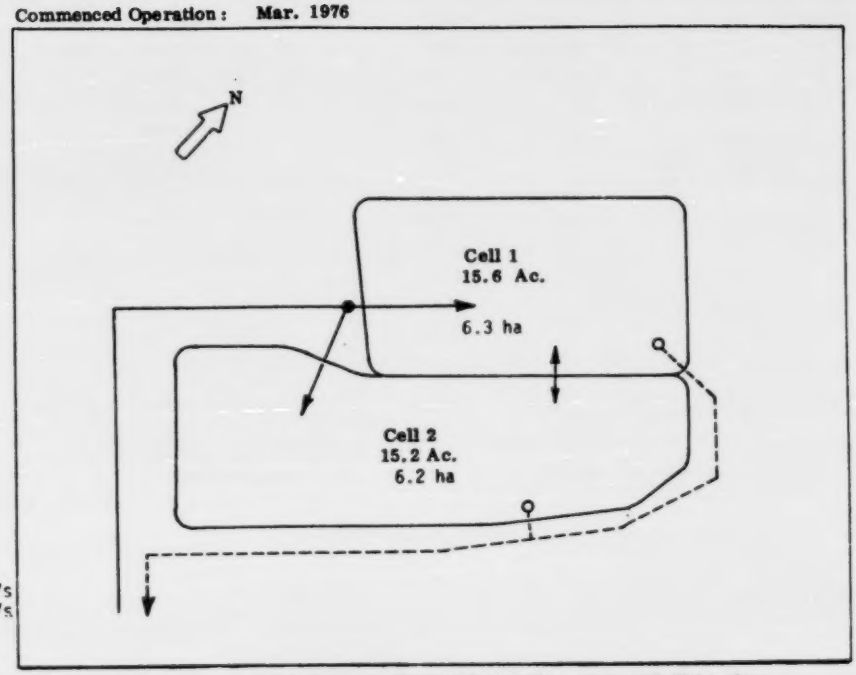
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 750 I gpm 56.8 l/s
Pump 2 : 750 I gpm 56.8 l/s

Total Cap : 750 I gpm
56.8 l/s



Significant Industries : Tweed Veneers, Tweed Steel Works, Sawyer Stoll Lumber, Lakewood Forest Products, Rashotte Lumber .

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT — REPORT DATE: 24 DEC 81

WORKS NUMBER : 120000952 THEED LAGOON

MUNICIPALITY : THEED
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,632
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 1.209 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA —>			<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN																
FEB																
MAR																
APR																
MAY																
JUN																
JUL																
AUG																
SEP																
OCT																
NOV																
DEC																
TOTAL																
AVERAGE																
MAXIMUM																
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : VANKLEEK HILL

Cell Acreage : 10 + 10 + 10 Cell Area: 4.0 + 4.0 + 4.0 ha

Total Acreage : 30 Acres Total hectares: 12.0

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

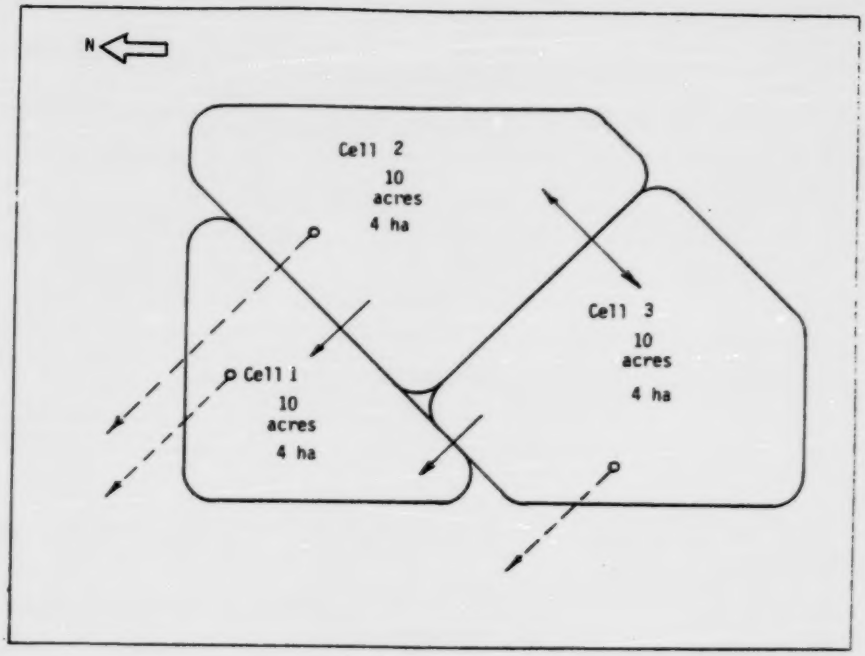
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 404 I gpm 54.5 l/s
Pump 2 : 404 I gpm 54.5 l/s

Total Cap : 610 I gpm 56.2 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001658 VANKLEEK HILL LAGOON

MUNICIPALITY : VANKLEEK HILL
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,634
POPULATION SERVED : 1,634
PERCENT SERVED : 100.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	17.288	.558	.697		94.0				122.0				7.7			
FEB	14.874	.513	.545		158.0				250.0				10.0			
MAR	23.109	.745	1.714		170.0				153.0				7.8			
APR	29.413	.980	1.163	3.900	143.0	5.0	96		120.0	*			6.8	*		
MAY	20.380	.658	.809	29.900	135.0	5.0	96		170.0	11.0	93		8.6	1.1	87	
JUN	16.177	.539		2.600	193.0	7.0	96		220.0	8.0	96		9.3	1.8	80	
JUL	18.150	.585			178.0				243.0				6.2			
AUG	16.872	.544			143.0				293.0				6.8			
SEP	18.895	.630			170.0				188.0				7.5			
OCT	20.608	.665		1.300	403.0	2.0	99		380.0	20.0	94		8.6	1.8	79	
NOV	24.574	.819		50.700	51.0	3.3	93		78.0	13.0	83		3.8	1.5	60	
DEC	23.720	.765		19.500	58.0	9.0	84		70.0	15.0	78		3.4	2.1	38	
TOTAL	244.060			107.900				37.3				43.2				1.4
AVERAGE		.667			158.0	5.2	96		190.5	13.4	92		7.2	1.6	76	
MAXIMUM			1.714	50.700												
NO. OF SAMPLES					22	21			22	21			22	40		

Waste Stabilization Pond

PROJECT : WESTPORT

Cell Acreage : 7 Acres Cell area: 2.8 ha

Total Acreage : 7 Acres Total hectares: 2.8

Commenced Operation: Feb. 1974

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

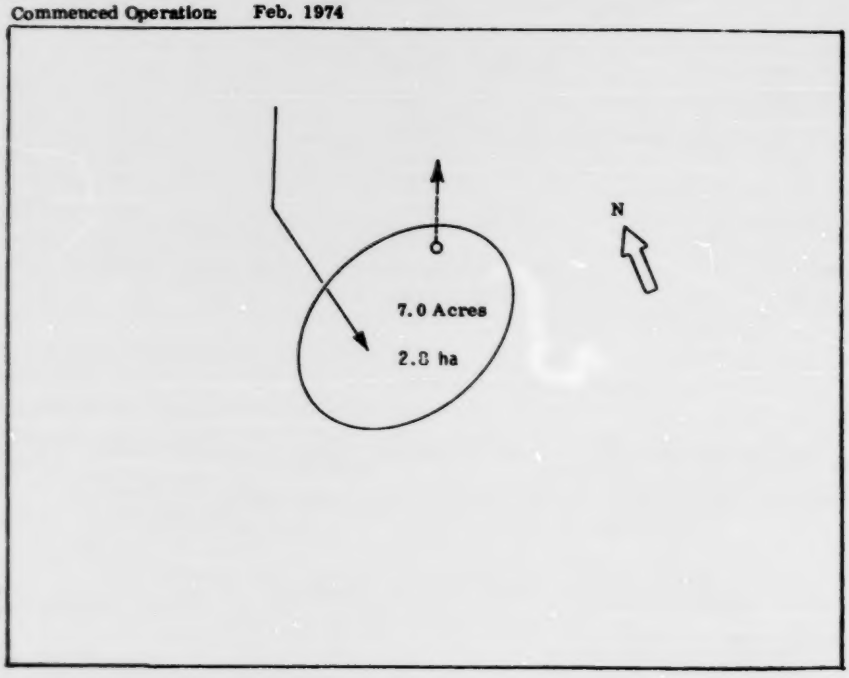
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 300 I gpm 22.7 l/s
Pump 2 : 300 I gpm 22.7 l/s

Total Cap : 350 I gpm 26.5 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001550 WESTPORT LAGOON

MUNICIPALITY : WESTPORT
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 686
POPULATION SERVED : 596
PERCENT SERVED : 86.8

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.327 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

DATE	FLOW DATA: TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	BIOCHEMICAL OXYGEN DEMAND: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	SUSPENDED SOLIDS: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	TOTAL PHOSPHORUS: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	7.589	.245	.368		42.0				50.0				4.2			
FEB	7.608	.262	.328		64.0				35.0				3.7			
MAR	7.931	.256	.518		*				*				*			
APR	8.459	.282	.443	37.207	80.0	8.7	89		55.0	14.7	73		4.3	.5	87	
MAY	7.821	.252	.388	6.415	*	*			*	*			*	*		
JUN	6.537	.218	.298		*				*				*			
JUL	7.510	.242	.278		*				*				*			
AUG	7.598	.245	.298		*				*				*			
SEP	6.235	.208	.229		126.0				130.0				7.6			
OCT	6.323	.204	.226	6.110	*	6.0			*	9.5			*	.2		
NOV	7.307	.244	.274	28.106	*	9.2			*	7.2			*	.4		
DEC	8.608	.278	.414		*				*				*			
TOTAL	89.526			77.838				6.2				5.1				0.4
AVERAGE		.245			78.0	7.9	89		67.5	10.4	84		4.9	.3	92	
MAXIMUM			.518	37.207												
NO. OF SAMPLES					3	17			3	17			4	17		

Waste Stabilization Pond

PROJECT WINCHESTER

422

Cell Acreage : 7.7 + 9.0 Cell area: 3.1 + 3.6 ha

Total Acreage : .7 Total hectares: 6.7

Commenced Operation : (7.7 Acre Cell) : 1960
Second Cell Added (9.0 Acre Cell) : 1971

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

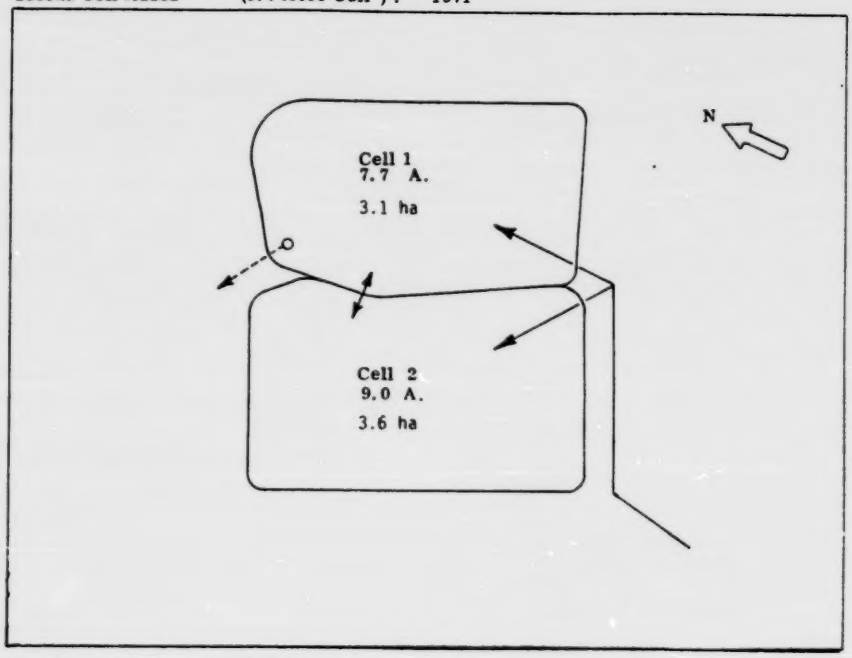
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 480 US gpm 30.3 l/s
Pump 2 : 480 US gpm 30.3 l/s

Total Cap : 460 US gpm 29.0 l/s



Signifigant Industry : 130 Bed Hospital

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001202 WINCHESTER LAGOON

MUNICIPALITY : WINCHESTER
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,866
POPULATION SERVED : 1,850
PERCENT SERVED : 99.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA —>				<-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG	INFLUENT MG/L	EFFLUENT MG/L	% REDUCTION	1000 KG
JAN/80-DEC/80																
JAN	25.720	.829	1.410		56.0				88.0				8.2			
FEB	19.050	.657	.658		123.0				155.0				10.0			
MAR	27.750	.895	1.525		*				*				*			
APR	29.610	.987	1.213	*	74.0	9.0	87		139.0	13.0	90		4.4	.3	92	
MAY	28.710	.957	1.097	*	190.0	25.0	86		353.0	170.0	51		6.8	4.1	39	
JUN	21.779	.725	.835		80.0				115.0				4.8			
JUL	17.320	.589	.783		72.0				95.0				7.7			
AUG	20.922	.674	.738		62.0				75.0				5.0			
SEP	23.734	.791	.930		150.0				490.0				7.2			
OCT	27.279	.879	1.336		70.0				95.0				4.6			
NOV	27.936	.997	1.090	*	52.0	12.7	75		125.0	35.0	72		4.2	3.5	16	
DEC	34.534	1.114	1.460	*	70.0	7.0	90		210.0	17.0	91		3.6	3.8	-	-
TOTAL	304.344							23.5				35.8				0.9
AVERAGE		.841			90.8	13.4	85		176.3	58.7	66		6.0	2.9	51	
MAXIMUM			1.525													
NO. OF SAMPLES					14	8			14	8			14	6		

Ministry of the Environment
Ontario

Northeastern Region

⑤

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

Sault Ste. Marie
445 Albert St. E.
705-949-4640

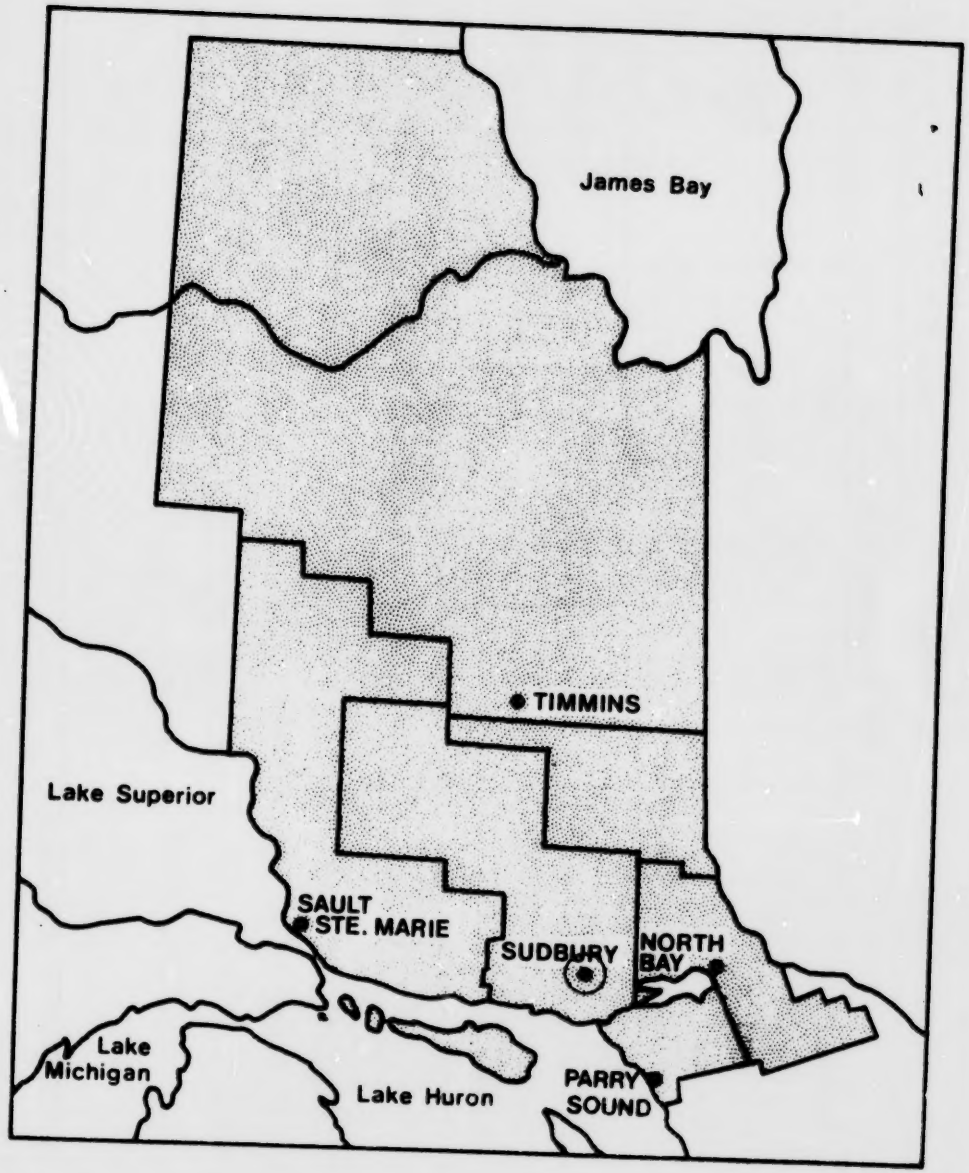
Timmins
83 Algonquin Blvd. W.
705-264-9474

Parry Sound
74 Church St.
705-746-2139

Ministry of the Environment
Ontario

Northeastern Region

⑤



Waste Stabilization Pond

PROJECT : (MANITOWANING)
ASSIGINACK

Cell Acreage : 3.8 + 3.8 | Cell Area: 1.5 + 1.5 ha

Total Acreage : 7.6 Acres | Total hectares: 5.0

Commenced Operation: February 1976

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

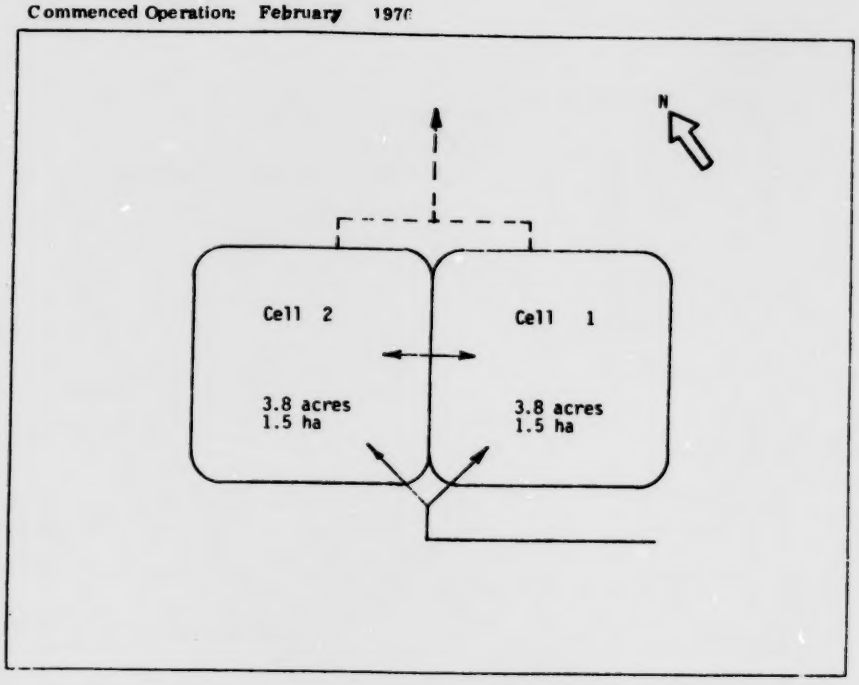
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 720 I gpm 30.6 l/s
Pump 2 : 720 I gpm 30.6 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001408 MANITOWANING LAGOON

MUNICIPALITY : ASSIGINACK(MANITOWANING)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 860
POPULATION SERVED : 440
PERCENT SERVED : 51.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.545 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	8.046	.260	.419		119.0				150.0				7.4			
FEB	5.493	.189	.216		162.5				230.0				8.8			
MAR	8.362	.270	.582		70.0				95.0				5.7			
APR	11.375	.379	.576	22.730	52.0	16.0	69		80.0	35.0	56		4.1	2.3	43	
MAY	7.628	.246	.290		22.5				35.0				4.0			
JUN	6.502	.217	.253		31.0				56.0				1.3			
JUL	6.533	.211	.232		13.0				23.0				2.0			
AUG	5.859	.189	.226		32.0				50.0				7.7			
SEP	6.828	.228	.349		12.0				12.0				.7			
OCT	6.309	.204	.220		26.0				33.0				2.0			
NOV	6.684	.223	.459	22.730	14.0	14.2	-		15.0	67.0	-	-	.9	1.4	-	-
DEC	7.779	.251	.388		47.0				130.0				3.9			
TOTAL	87.398			45.460				3.1				2.2				0.2
AVERAGE		.239			50.0	15.1	69		75.7	51.0	32		4.0	1.8	54	
MAXIMUM			.582	22.730												
NO. OF SAMPLES					21	5			21	5			21	5		

Waste Stabilization Pond

PROJECT : BLACK RIVER - MATHESON
(VAL GAGNE)

Cell Acreage : 5 | Cell area: 2.0 ha

Total Acreage : 5 acres | Total hectares: 2.0

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

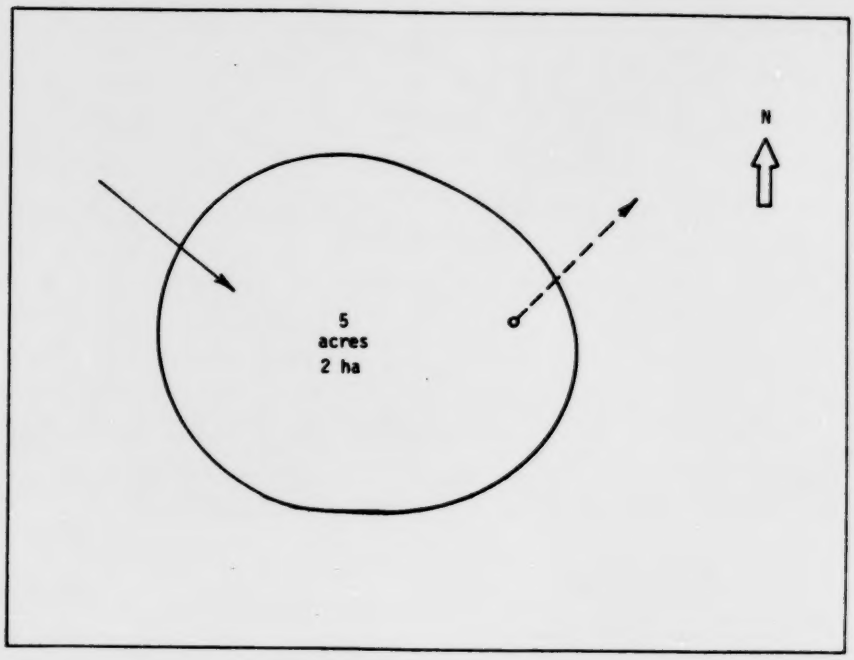
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 120001559 VAL GAGNE LAGOON 5 A 1 CELL

MUNICIPALITY : BLACK R. MATHESON (V.G.)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 3,796
POPULATION SERVED : 0
PERCENT SERVED : 0.0

OPERATING AUTHORITY: MUNICIPALITY

DESIGN CAPACITY : 0.227 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	BOD INFLUENT MG/L	BOD EFFLUENT MG/L	BOD REDUCTION %	BOD REDUCTION 1000 KG	SUSP.SOLIDS INFLUENT MG/L	SUSP.SOLIDS EFFLUENT MG/L	SUSP.SOLIDS REDUCTION %	SUSP.SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS REDUCTION %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/80-DEC/80																
JAN					49.0	12.0	75		90.0	12.0	86		4.9	3.6	26	
FEB	(* DATA NOT AVAILABLE)				145.0	17.0	88		180.0	12.0	93					
MAR					48.0	7.0	85		65.0	45.0	30		6.2	5.1	17	
APR					11.5	12.0	-		42.5	40.0	5		6.9	1.7	75	
MAY					70.0	8.5	87		88.0	15.0	82		4.4	.7	82	
JUN					73.0	8.7	88		100.0	40.0	60		1.8	1.2	35	
JUL					57.0	5.1	90		83.0	7.0	91		4.6	1.2	73	
AUG					39.5	4.0	89		82.5	5.0	93		3.4	1.2	64	
SEP					83.0	3.5	95		130.0	6.0	95		3.9	1.7	55	
OCT					24.0	3.0	87		52.5	2.5	95			1.5		
NOV					38.0	8.0	78		90.0	5.0	94			2.2		
DEC					60.0	6.0	90		160.0	7.0	95		6.7	2.8	58	
TOTAL																
AVERAGE					58.1	7.9	86		96.9	16.3	83		4.7	2.0	56	
MAXIMUM																
NO. OF SAMPLES					21	20			21	18			16	18		

Waste Stabilization Pond

PROJECT : BRUCE MINES

Cell Acreage : 7.3 Cell area: 3.0 ha

Total Acreage : 7.3 Total hectares: 3.0

Commenced Operation : January 16, 1975

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

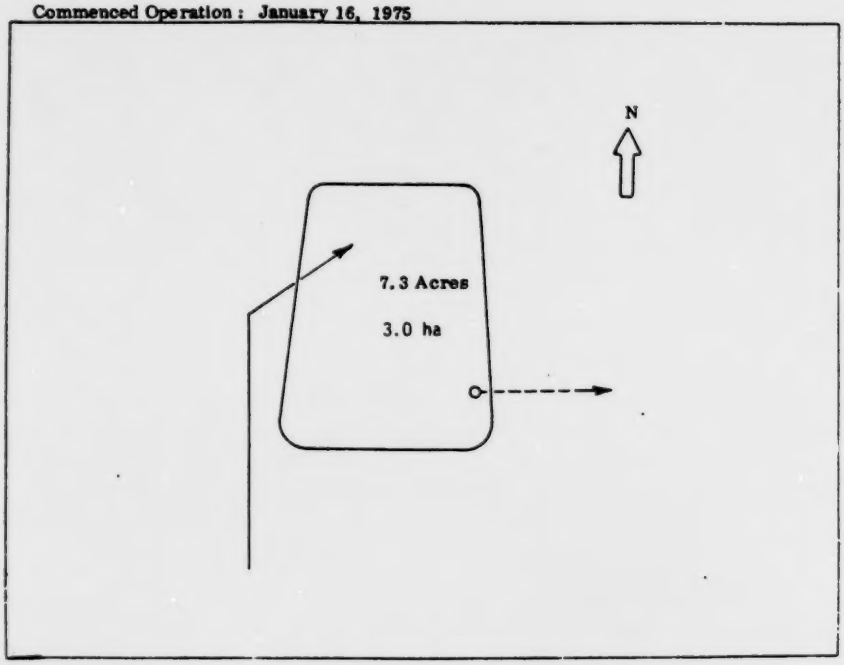
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 207 1 gpm 15.7 1/s
Pump 2 : 207 1 gpm 15.7 1/s

Total Cap : 207 1 gpm
15.7 1/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001756 BRUCE MINES LAGOON

MUNICIPALITY : BRUCE MINES
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 569
POPULATION SERVED : 422
PERCENT SERVED : 74.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.318 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA			—><-BIOCHEMICAL OXYGEN DEMAND->				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	9.943	.321			21.0				40.0				3.1			
FEB	7.220	.249			29.0				63.0				3.8			
MAR	8.000	.258			205.0				312.0				9.6			
APR	14.833	.494		43.400	75.0	14.5	80		225.0	21.2	90		3.5	1.8	48	
MAY	10.333	.344			87.5				162.5				6.1			
JUN	10.008	.333			46.5				82.5				3.8			
JUL	8.434	.272			103.0				95.0				6.2			
AUG	7.233	.249			90.0				130.0							
SEP	7.971	.249			90.0				130.0				6.2			
OCT	8.107	.261			64.0				90.0				4.7			
NOV	7.991	.285		41.400	93.5	16.8	82		115.0	55.0	52		4.2	1.7	59	
DEC	8.421	.272			77.0				82.5				5.2			
TOTAL	108.494			84.800				7.2				9.7				0.4
AVERAGE		.299			81.7	15.6	80		127.2	38.1	70		5.1	1.7	66	
MAXIMUM				43.400												
NO. OF SAMPLES					21	10			21	10			20	10		

Waste Stabilization Pond

PROJECT : BURKS FALLS

Cell Acreage : 9.5 + 9.5

Cell area: 3.8 + 3.8 ha

Total Acreage : 19

Total hectares: 7.7

Commenced Operation : 1974

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

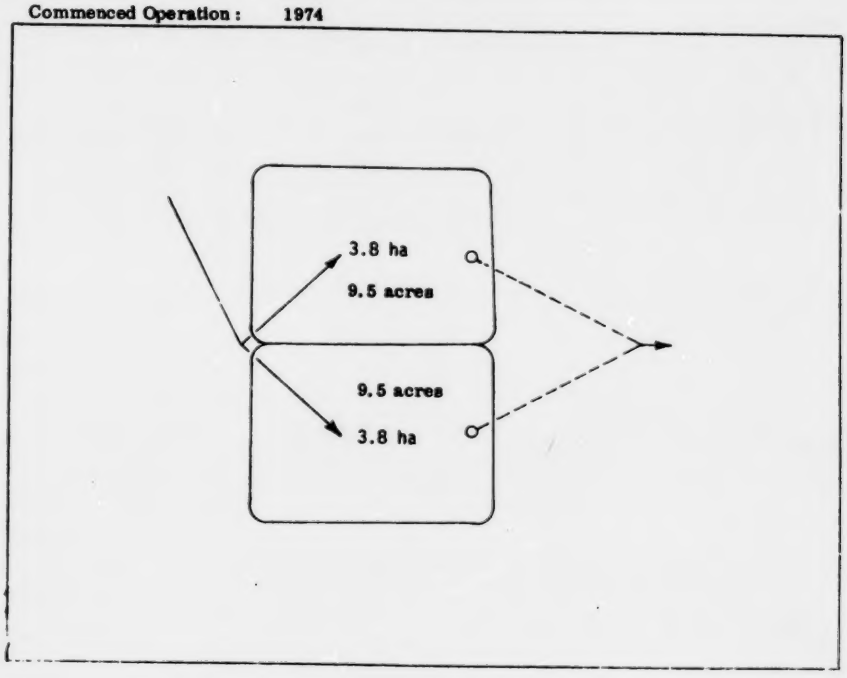
- □ Batch
- □ Continuous
- ■ None

Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 :	415 I gpm	31.4 l/s
Pump 2 :	415 I gpm	31.4 l/s
Total Cap :	415 I gpm	31.3 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001426 BURKS FALLS LAGOON

MUNICIPALITY : BURKS FALLS
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 841
POPULATION SERVED : 800
PERCENT SERVED : 95.1

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.863 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	6.913	.223	.305		178.0				108.0				*			
FEB	7.561	.260	.270		*				*				*			
MAR	9.896	.319	.328		*				*				*			
APR	10.320	.340	.360	46.900	*	6.7			*	27.8			*	3.5		
MAY	10.080	.320			86.0				110.0				5.0			
JUN	9.300	.310	.310		*				*				*			
JUL	8.329	.270	.280		*				*				*			
AUG	9.155	.290	.300		*				*				*			
SEP	9.834	.328	.443		22.0				40.0				2.7			
OCT	14.054	.450	.455	28.170	107.0	4.1	96		60.0	9.0	85		4.5	3.2	28	
NOV	8.030	.277	.277		70.5				102.5				7.8			
DEC	5.025	.162	.232		66.0				70.0				6.7			
TOTAL	108.497			75.070				9.0				6.9				0.2
AVERAGE		.296			88.2	5.4	93		81.7	18.4	77		5.3	3.3	37	
MAXIMUM			.455	46.900												
NO. OF SAMPLES					8	6			8	6			7	6		

Waste Stabilization Pond

PROJECT : CALDWELL TWP (Verner)

Cell Acreage : 7.0 + 7.0 Cell area: 2.8 + 2.8 ha

Total Acreage : 14 Total hectares: 5.6

Commenced Operation : 1975

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

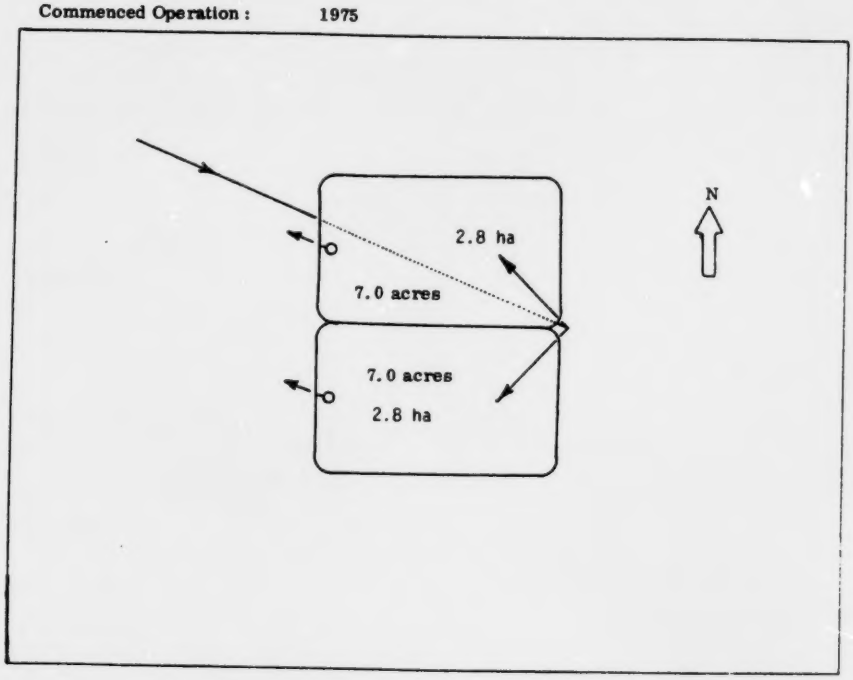
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 492 I gpm 37.2 l/s
Pump 2 : 492 I gpm 37.2 l/s

Total Cap : 492 I gpm 37.21/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001872 VERNER LAGOON

MUNICIPALITY : CALDWELL (VERNER)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,804
POPULATION SERVED : 1,100
PERCENT SERVED : 60.9

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.636 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	14.114	.455	1.493	21.290	*	16.3			*	31.0			*	1.4		
FEB	8.583	.296	.354	13.310	*	16.5			*	25.0			*	1.7		
MAR	11.391	.367	.884		*				*				*			
APR	19.231	.641	1.394		42.0				95.0				2.1			
MAY	15.003	.484	.660	43.248		7.5										
JUN	13.888	.463	.612	45.420	*				*	*			*	.1		
JUL	16.456	.531	.777		88.0	9.1	89		155.0	22.3	85		3.0	.2	91	
AUG	16.252	.524	.680		85.3				216.6				6.3			
SEP	18.086	.603	1.224	45.760	69.5				260.0				3.4			
OCT	18.224	.588	.748		108.3	2.9	97		93.0	8.8	90		8.8	.2	96	
NOV	15.096	.503	.680	40.394	60.5				280.0				2.7			
DEC	13.084	.422	.476		45.5	11.0	75		247.5	15.0	93		4.3	.2	94	
					70.0				150.0				4.6			
TOTAL	179.410			209.422				10.9				29.9				0.7
AVERAGE		.490			71.1	10.5	85		187.1	20.4	89		4.4	.6	84	
MAXIMUM			1.493	45.760												
NO. OF SAMPLES					15	22			15	19			15	22		

Waste Stabilization Pond

PROJECT : CASIMIR - JENNINGS - APPLEBY (ST. CHARLES)

Cell Acreage : 6 + 6 Cell area: 2.4 + 2.4 ha

Total Acreage : 12 Total hectares: 4.8

Commenced operation: October, 1980

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

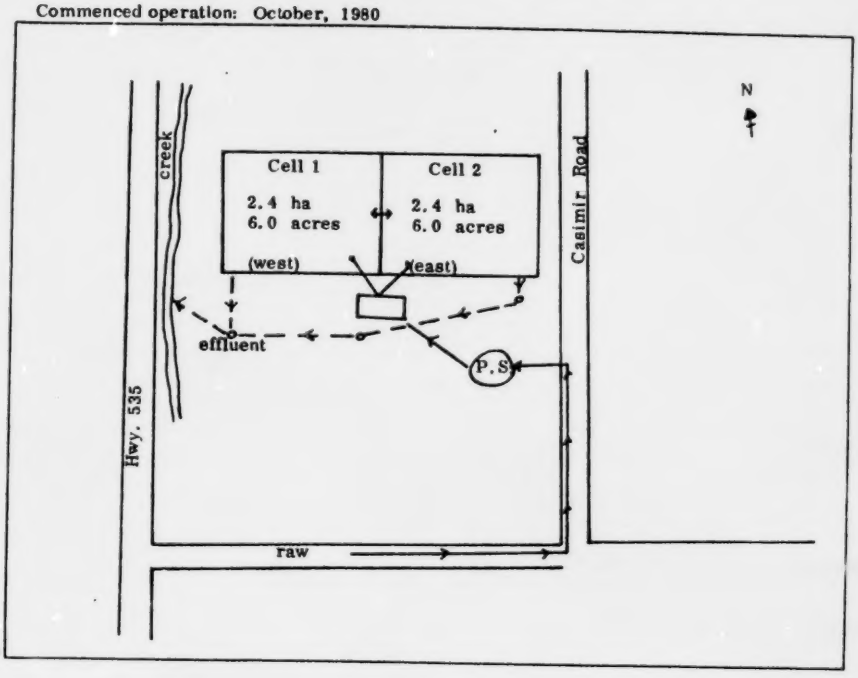
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 500 Igpm 37.9 l/s
Pump 2 : 600 Igpm 37.9 l/s

Total Cap : 1000 Igpm 75.7 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002256 ST. CHARLES LAGOON

MUNICIPALITY : CASIMIR-JENNINGS-APPLEBY
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL START- UP OCTOBER 1980

CURRENT POPULATION : 1,000
POPULATION SERVED : 280
PERCENT SERVED : 28.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN																
FEB																
MAR																
APR																
MAY																
JUN																
JUL																
AUG																
SEP																
OCT	1.977	.064	.136													
NOV	1.977	.066	.136		23.0				52.5				1.2			
DEC	1.910	.062	.068		90.0				160.0				5.6			
TOTAL	5.864															
AVERAGE		.064			56.5				106.2				3.4			
MAXIMUM			.136													
NO. OF SAMPLES					3				3				3			

Waste Stabilization Pond

PROJECT : FAUQUIER TWP. (MOONBEAM)

Cell Acreage : 6.0 Cell area: 2.4 ha

Total Acreage : 6.0 Total hectares: 2.4

Commenced Operation : 1961

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

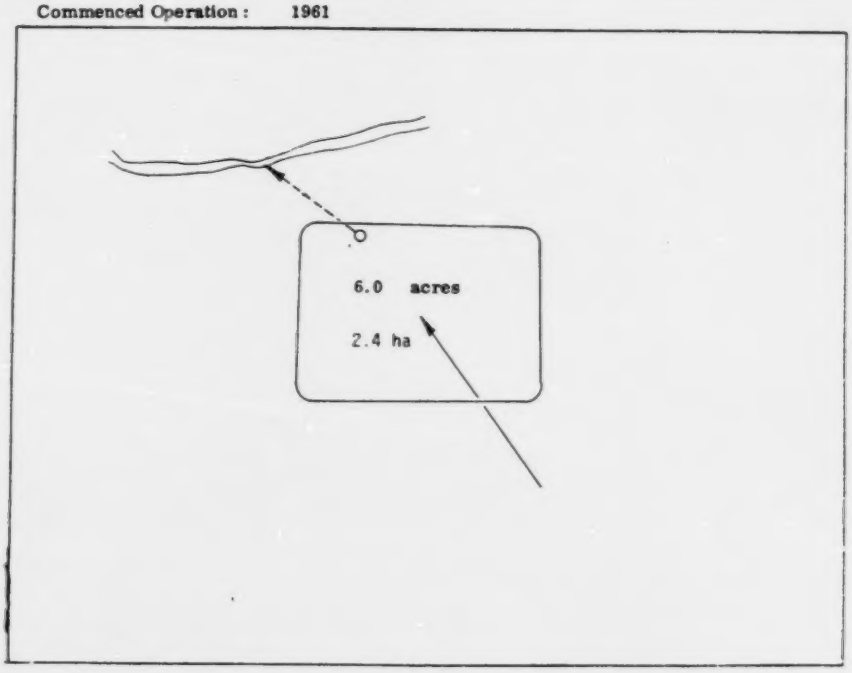
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 338 I gpm 25.6 l/s
Pump 2 : 338 I gpm 25.6 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000230 MOONBEAM LAGOON

MUNICIPALITY : FAUQUIER (MOONBEAM)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL (* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,403
POPULATION SERVED : 1,000
PERCENT SERVED : 71.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.272 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	*				800.0				1460.0				13.0			
FEB	6.540	.226	.310		1390.0				2260.0				12.0			
MAR	11.890	.384			150.0				145.0				5.1			
APR	20.883	.696	1.568	46.200	*	3.6			*	35.0			*	1.3		
MAY	11.530	.370	.461		30.0				70.0				4.8			
JUN	11.393	.370	.670		58.0				105.0				4.7			
JUL	9.935	.320	.670		*				*				*			
AUG	10.049	.324	.559		*				*				*			
SEP	9.937	.331	.782		100.0				145.0				9.3			
OCT	12.957	.417	.894		315.0				590.0				10.0			
NOV	11.950	.398	.782	46.200	45.0	*			105.0	*			4.7	*		
DEC	8.816	.284			*				*				*			
TOTAL	125.880			92.400				45.0				72.4				0.8
AVERAGE		.375			361.0	3.6	99		610.0	35.0	94		7.9	1.3	83	
MAXIMUM			1.568	46.200												
NO. OF SAMPLES					8	3			8	3			8	3		

Waste Stabilization Pond

PROJECT : GORE BAY

Cell Acreage : 9.2 + 9.2

Total Acreage : 18.4

Cell Area : 3.7 + 3.7 ha

Total Hectares : 7.4

Commenced Operation: August 1980

Operation :

- ☐ Series
- ■ Parallel (also Series if desired)
- ☐ Other :

Discharge :

- ■ Seasonal (spring + fall)
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

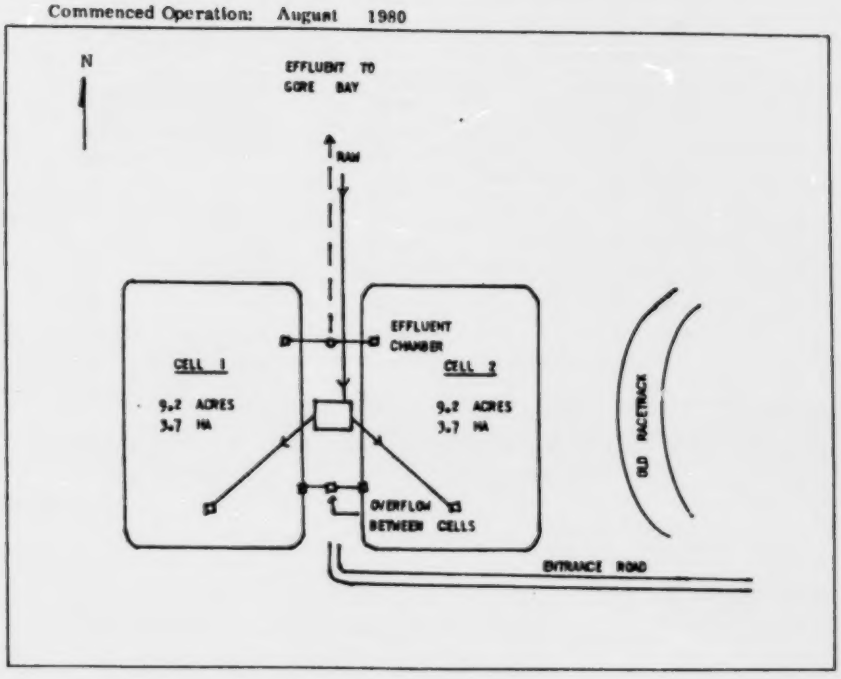
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 347 Igpm 26.3 l/s
Pump 2 : 347 Igpm 26.3 l/s

Total Cap : 347 Igpm 26.3 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002513 GORE BAY LAGOON COMP AUG 80

MUNICIPALITY : GORE BAY
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 783
POPULATION SERVED : 400
PERCENT SERVED : 51.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.804 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN																
FEB																
MAR																
APR																
MAY																
JUN																
JUL																
AUG																
SEP	3.344	.111	.240													
OCT	6.910	.223			57.0				50.0				4.3			
NOV	4.020	.134	.191		132.5				135.0				2.5			
DEC	4.440	.143	.196													
TOTAL	18.714															
AVERAGE		.153			94.7				92.5				3.4			
MAXIMUM			.240													
NO. OF SAMPLES					3				3				3			

Waste Stabilization Pond

PROJECT : HAILEYBURY (NORTH COBALT)

434

Cell Acreage : 10 Cell area: 4 ha

Total Acreage : 10 Total hectares: 4

Commenced Operation: N/A

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ■ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

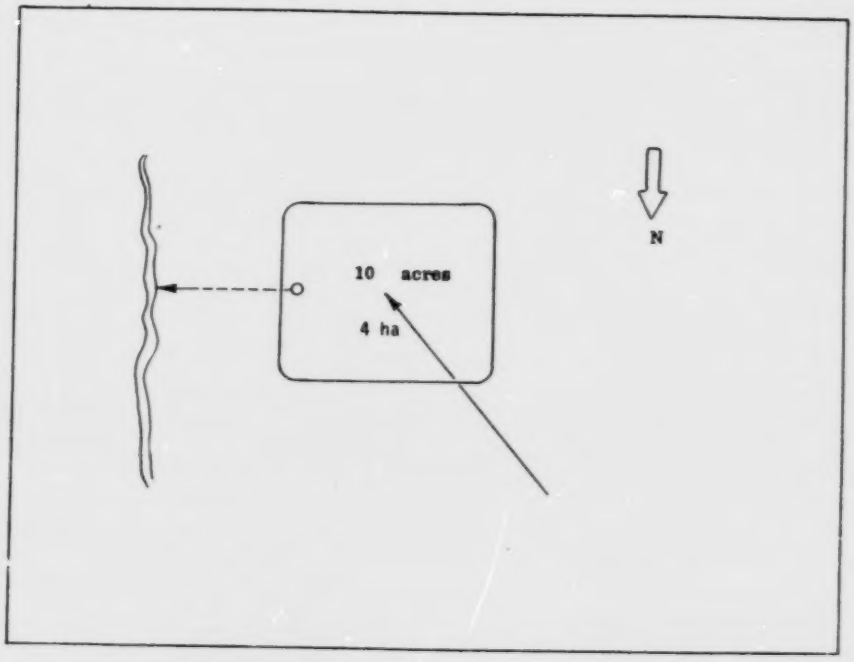
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 231 I gpm 17.5 l/s
Pump 2 : 225 I gpm 17.5 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001382 NORTH COBALT LAGOON

MUNICIPALITY : HAILEYBURY (N.COBALT)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 4,997
POPULATION SERVED : 800
PERCENT SERVED : 16.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	7.170	.230	.480		100.0				120.0				6.9			
FEB	5.080	.170	.200		80.0				165.0				4.1			
MAR	8.990	.290	.730		144.0				273.0				9.1			
APR	22.750	.750	1.500		75.0				135.0				3.3			
MAY	11.310	.360	.600	45.020	90.0	12.0	86		90.0	16.5	81		8.3	2.1	74	
JUN	8.423	.280	.950		61.0				98.0				4.4			
JUL	5.887	.190	.284		155.0				118.0				*			
AUG	8.031	.259	.520		167.0				108.0				*			
SEP	14.953	.498	.844		145.0				195.0				*			
OCT	10.425	.336			*				*				*			
NOV	*				*				*				*			
DEC	11.101	.358			*				*				*			
TOTAL				45.020				12.5				15.8				0.5
AVERAGE		.338			113.0	12.0	89		144.6	16.5	88		6.0	2.1	65	
MAXIMUM			1.500	45.020												
NO. OF SAMPLES					15	2			15	2			11	2		

Waste Stabilization Pond

PROJECT : HEARST

Cell Acreage : 15.5 + 15.5 + 15.5 + 15.5 Cell Area: 6.3 + 6.3 + 6.3 + 6.3 ha
(Note: Est. 50 Acres Usable due to rock outcropping)
Total Acreage : 50 (Usable Equivalent) Total hectares: 20.2 (Usable)

Commenced Operation : July 1973

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- ■ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

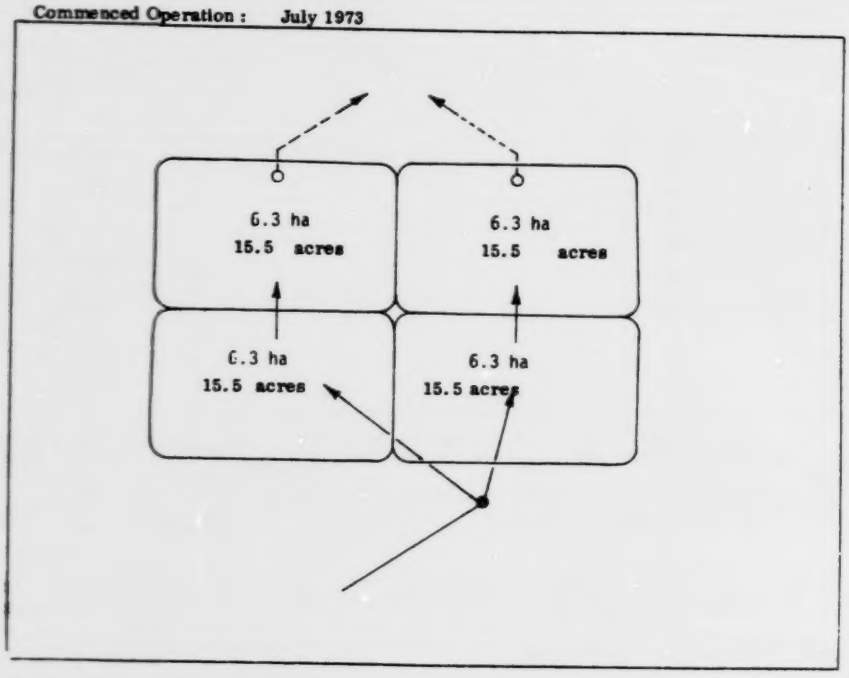
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 1400 I gpm 106.0 l/s
Pump 2 : 1400 I gpm 106.0 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000338 HEARST LAGOON (ADD 3 AER CELLS IN 81)
MUNICIPALITY : HEARST
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON (* DATA NOT AVAILABLE)
CONTINUOUS DISCHARGE
CURRENT POPULATION : 5,212
POPULATION SERVED : 5,200
PERCENT SERVED : 99.7
OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.273 1000 M3 DESIGN BOD5 : 250.0 MG/L DESIGN SUSP.SOLIDS : 250.0 MG/L

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	83.338	2.688	3.723		*				*				*			
FEB	71.026	2.449	3.143		*				*				*			
MAR	83.474	2.692	4.304		*				*				*			
APR	151.900	5.064	9.540		*				*				*			
MAY	140.974	4.548	10.770	34.471	155.0	20.0	87		595.0	25.0	95		39.0	.7	98	
JUN	117.264	3.908	6.594		34.0				218.0				2.5			
JUL	114.400	3.692	9.397		56.0				205.0				4.9			
AUG	94.000	3.033	4.333		62.0				90.0				3.8			
SEP	92.062	3.068	4.607	34.471	120.0	3.0	97		278.0	59.0	78		6.8	.4	92	
OCT	105.428	3.401			75.0				160.0				6.4			
NOV	85.244	2.841		38.282	105.0	3.2	96		140.0	6.5	95		*	.6		
DEC	75.926	2.449	2.791	76.000	130.0	12.0	90		245.0	20.0	91		7.2	1.0	86	
TOTAL	1215.036			183.224				180.4				259.6				11.3
AVERAGE		3.319			92.1	9.5	89		241.3	27.6	88		10.0	.7	92	
MAXIMUM			10.770	76.000												
NO. OF SAMPLES					12	9			12	9			11	9		

Waste Stabilization Pond

PROJECT : MICHIPICOTEN TWP (WAWA)

Cell Acreage : 20 + 20 Cell area: 8.1 + 8.1

Total Acreage : 40 Total hectares: 16.2

Commenced Operation : September 1963

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

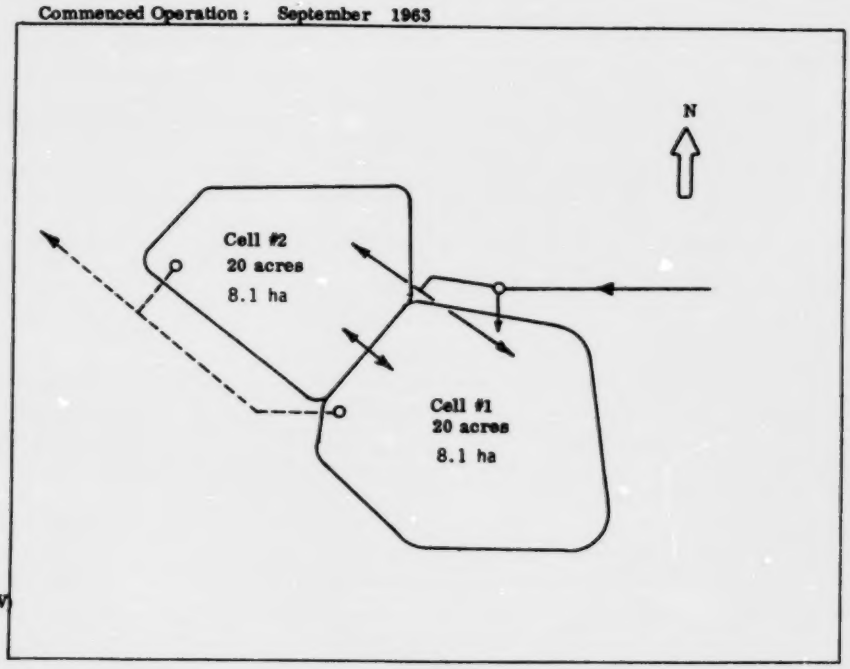
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 :
Pump 2 : (GRAVITY FLOW)

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000454 MAMA LAGOON

MUNICIPALITY : MICHIPICOTEN (MAMA)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 4,595
POPULATION SERVED : 4,000
PERCENT SERVED : 87.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.818 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	60.000	1.935			*				*				*			
FEB	60.000	2.140			*				*				*			
MAR	70.000	2.258			*				*				*			
APR	90.000	3.000			*				*				*			
MAY	70.000	2.258		197.683	80.0	*			110.0	*			5.9	*		
JUN	60.000	2.000			46.0				80.0				3.1			
JUL	50.000	1.613			*				*				*			
AUG	60.000	1.935			*				*				*			
SEP	60.000	2.000			28.0				60.0				3.7			
OCT	70.000	2.258			*				*				*			
NOV	70.000	2.333		197.683	*	*			*	*			*	*		
DEC	60.000	1.935			60.0				80.0				5.2			
TOTAL	780.000			395.366												
AVERAGE		2.139			53.5				82.5				4.4			
MAXIMUM				197.683												
NO. OF SAMPLES					3				3				3			

420

Waste Stabilization Pond

PROJECT : NORTH HIMSWORTH (CALLANDER)

Cell Acreage : 14.5

Total Acreage : 14.5

Cell area: 6.3 ha

Total hectares: 6.3

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other : One Cell

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

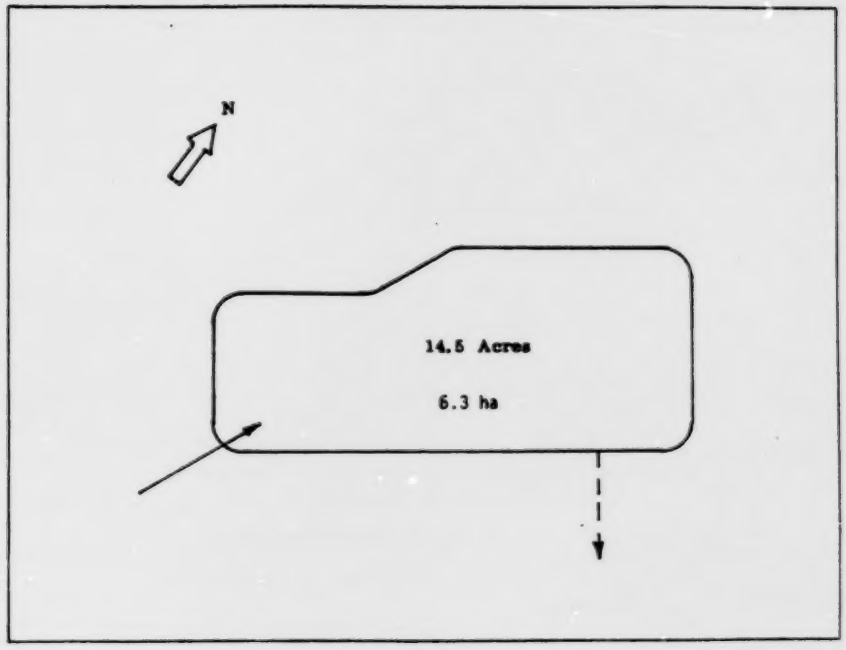
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 609 lgpm 46.1 l/s
Pump 2 : 609 lgpm 46.1 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001747 CALLANDER LAGOON

MUNICIPALITY : NORTHHIMSWORTH(CALLANDER
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,314
POPULATION SERVED : 1,230
PERCENT SERVED : 53.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.477 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	15.163	.489	.604		79.0				87.5				6.0			
FEB	10.673	.368	.467		195.0				160.0				7.8			
MAR	13.696	.442	.712		117.5				152.5				6.5			
APR	20.135	.671	.869		65.0				100.0				4.6			
MAY	16.721	.539	.805	73.130	100.5	3.2	96		97.5	12.0	87		3.6	.3	91	
JUN	14.304	.477	.609		110.0				108.0				6.9			
JUL	14.417	.465	.569		82.0				152.0				24.5			
AUG	14.708	.474	.640		150.0				135.0				7.4			
SEP	19.156	.639	.732		110.5				112.5				5.7			
OCT	21.443	.692	.769	95.200	61.0	2.3	96		75.0	5.8	92		3.8	.2	94	
NOV	17.120	.571	.760		77.5				85.0				7.4			
DEC	14.620	.472	.574		117.5				87.5				5.0			
TOTAL	192.156			168.330				19.7				19.9				1.4
AVERAGE		.525			105.4	2.7	97		112.7	8.9	92		7.4	.2	96	
MAXIMUM			.869	95.200												
NO. OF SAMPLES					15	19			15	19			15	17		

437

Waste Stabilization Pond

PROJECT : OWENS W.I. (VAL RITA)

Cell Acreage : 9.0 + 7.5

Cell Area : 2.7 + 2.3 ha

Total Acreage : 16.5

Total Hectares : 5.0

Commenced Operation: September 1979

Operation :

- ◘ Series
- ■ Parallel
- □ Other :

Discharge :

- □ Seasonal
- □ Continuous
- ■ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

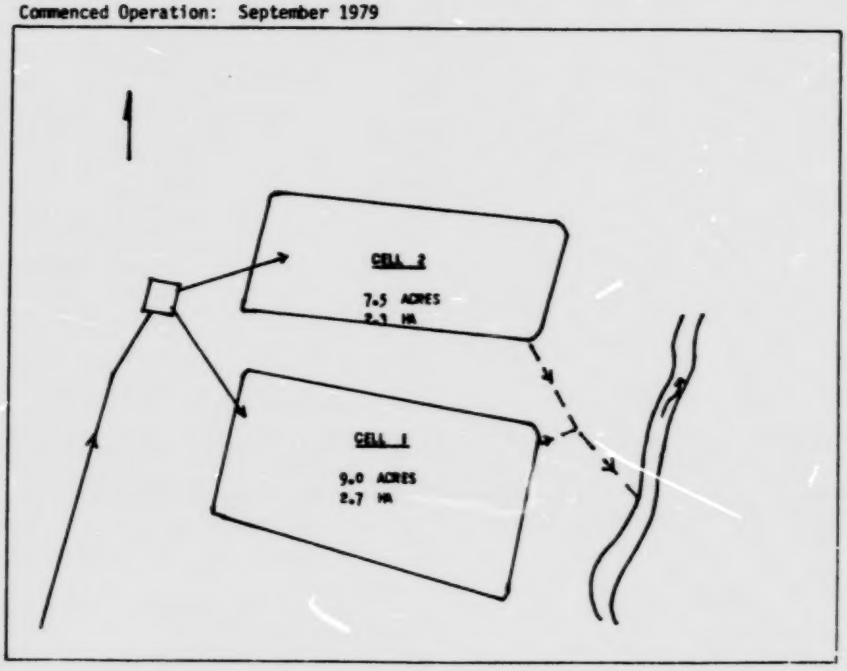
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1: 85 I gpm 6.4 l/s
Pump 2: 85 I gpm 6.4 l/s

Total Cap: 170 I gpm 12.8 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002318 VAL-RITA LAGOON

START-UP SEPTEMBER 1979

MUNICIPALITY : OWENS,MILLIAMSON-IDING'T
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL ANNUAL DISCHARGE

DATA NOT AVAILABLE

CURRENT POPULATION : 1,410
POPULATION SERVED : 500
PERCENT SERVED : 35.4

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.704 1000 M3 DESIGN BOD5 : MG/L DESIGN SUSP.SOLIDS :

	<-- FLOW DATA -->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN																
FEB																
MAR																
APR																
MAY																
JUN																
JUL																
AUG	9.800	.316														
SEP																
OCT																
NOV																
DEC																
TOTAL																
AVERAGE		.316														
MAXIMUM																
NO. OF SAMPLES																

Waste Stabilization Pond

PROJECT : (Warren)
Ratter and Dunnet

Cell Acreage : 10 + 10

Total Acreage : 20 acres

Cell area: 4 + 4 ha

Total hectares: 8

Operation :

- ■ Series
- ■ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

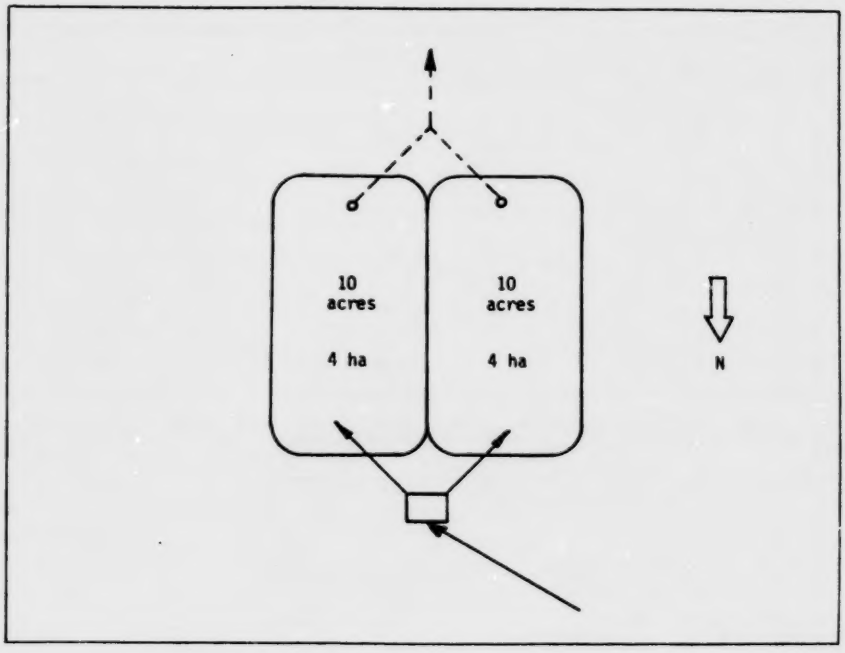
Flow Measurement :

- □ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 450 I gpm 34.1 l/s
Pump 2 : 450 I gpm 34.1 l/s

Total Cap : 450 I gpm 34.1 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001916 WARREN LAGOON

MUNICIPALITY : RATTER&DUNNETT (WARREN)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 1,595
POPULATION SERVED : 610
PERCENT SERVED : 38.2

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.604 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	8.368	.269	.607		74.0				90.0				4.6			
FEB	5.967	.210	.466		120.0				150.0				8.6			
MAR	7.510	.240	.447		95.0				110.0				6.9			
APR	9.474	.315	.407	3.180	190.0	14.0	92		395.0	10.0	97		6.9	2.2	68	
MAY	10.359	.334	.448		160.0				230.0				5.1			
JUN	7.064	.235	.295		175.0				295.0				9.5			
JUL	5.686	.180	.203		300.0				795.0				9.7			
AUG	5.439	.170	.254		346.0				555.0				12.0			
SEP	6.769	.220	.445	*	100.0	1.8	98		110.0	15.0	86		5.3	.7	85	
OCT	7.071	.235	.312	49.090	25.0	8.2	67		40.0	10.0	75		3.0	.9	68	
NOV	8.640	.278	.359		*				*				*			
DEC	6.550	.211	.247		110.0				160.0				3.8			
TOTAL	88.897			52.270				13.0				22.6				0.5
AVERAGE		.241			154.0	8.0	94		266.3	11.6	95		6.8	1.3	80	
MAXIMUM			.607	49.090												
NO. OF SAMPLES					11	6			11	6			11	7		

Waste Stabilization Pond

PROJECT : SHACKLETON - MACHIN TWP (FAUQUIER)

Cell Acreage : 10.0 Cell area: 4.0 ha

Total Acreage : 10.0 Total hectares: 4.0

Commenced Operation : Nov. 1974

Operation :

- ☐ Series
- ☐ Parallel (Single Cell)
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

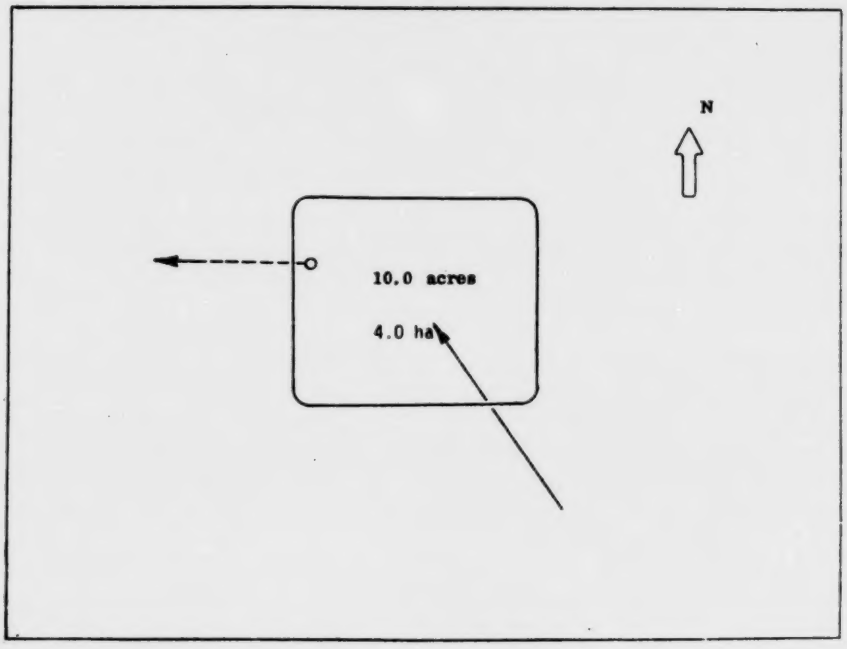
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 250 I gpm 18.9 l/s
Pump 2 : 250 I gpm 18.9 l/s

Total Cap : 250 I gpm 18.9 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001792 FAUQUIER LAGOON

MUNICIPALITY : SHACKLETON&MACHIN (FAUQ)
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL (* DATA NOT AVAILABLE)

CURRENT POPULATION : 914
POPULATION SERVED : 500
PERCENT SERVED : 54.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.363 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	6.827	.220	.335		620.0				245.0				5.2			
FEB	8.163	.281	.447		100.0				120.0				8.6			
MAR	11.176	.361	.895		60.0				100.0				6.0			
APR	26.614	.887	1.789	28.500	*	5.5			*	20.0			*	.7		
MAY	12.410	.400	.895		24.0				50.0				3.1			
JUN	9.501	.316	.670		64.0				120.0				1.8			
JUL	9.149	.295	.447		*				*				*			
AUG	9.042	.292	.559		*				*				*			
SEP	8.369	.278	.670		40.0				105.0				5.2			
OCT	10.831	.349	.782		68.0				300.0				2.5			
NOV	7.810	.260	.447	59.300	*	18.8			*	28.0			*	1.0		
DEC	7.025	.226			*				*				*			
TOTAL	126.917			87.800				16.2				15.8				0.5
AVERAGE		.347			139.4	12.1	91		148.5	24.0	83		4.6	.8	80	
MAXIMUM			1.789	59.300												
NO. OF SAMPLES					7	6			7	6			7	6		

Waste Stabilization Pond

PROJECT : TEMAGAMI

Cell Acreage : 3 + 4 Cell area: 1.21 + 1.61 ha

Total Acreage : 7 Total hectares: 2.81

Commenced operation: December, 1978

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

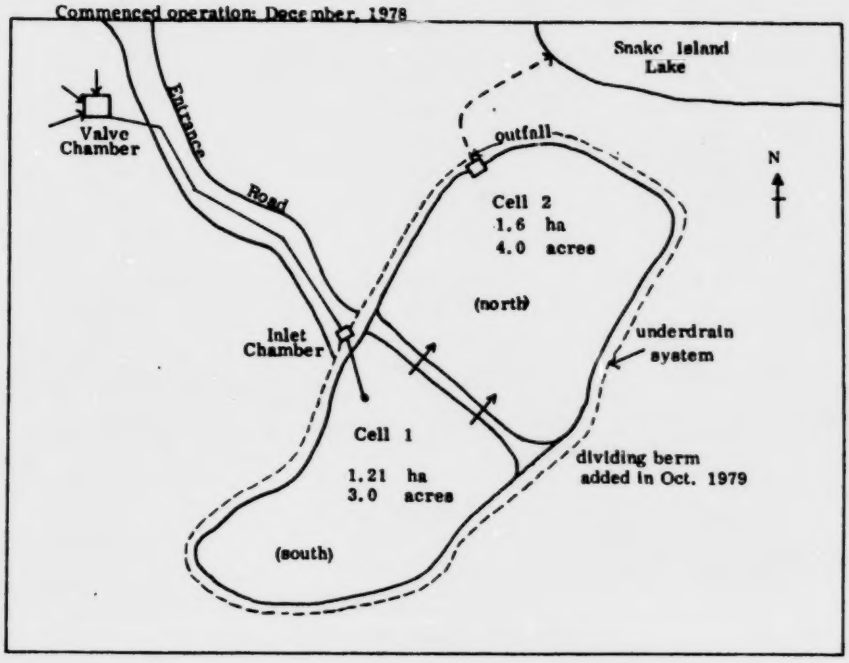
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : N.A.
Pump 2 : N.A.

Total Cap : N.A.



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002327 TEMAGAMI LAGOON

MUNICIPALITY : TEMAGAMI
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EFFLUENT CHLORINATION
PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 1,255
POPULATION SERVED : 350
PERCENT SERVED : 27.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.272 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	2.200	.071			*				*				*			
FEB	1.080	.030	.080		*				*				*			
MAR	.794	.026	.039		105.0				180.0				10.0			
APR	.430	.014	.023		135.0				155.0				10.0			
MAY	.310	.010	.014		255.0				240.0				14.0			
JUN	.220	.007			*				*				*			
JUL	.280	.009			*				*				*			
AUG	.660	.021			*				*				*			
SEP	.896	.030			*				*				*			
OCT	1.064	.034			*				*				*			
NOV	.850	.028			*				*				*			
DEC	1.423	.046			*				*				*			
TOTAL	10.207															
AVERAGE		.027			165.0				191.6				11.3			
MAXIMUM			.080													
NO. OF SAMPLES					3				3				3			

Waste Stabilization Pond

PROJECT : WEBBWOOD

442

Cell Acreage : 10 Acres
Total Acreage : 10 Acres

Cell area: 4.0 ha
Total hectares: 4.0

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

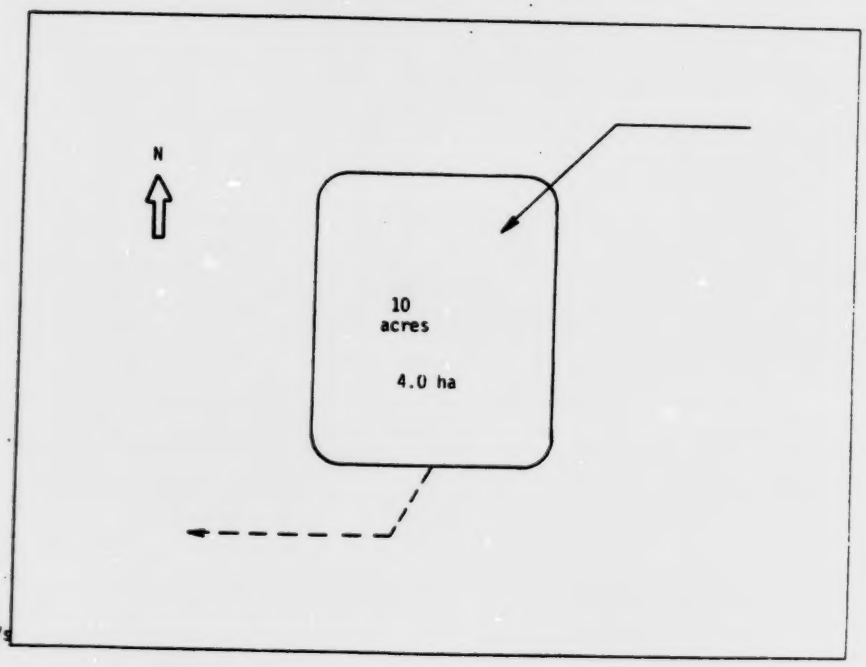
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 200 I gpm 15.1 l/s
Pump 2 : 200 I gpm 15.1 l/s

Total Cap : 200 I gpm 15.1 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001881 WEBBWOOD LAGOON

MUNICIPALITY : WEBBWOOD
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 511
POPULATION SERVED : 460
PERCENT SERVED : 90.0

(*. DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.454 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	2.868	.092	.305		22.0				50.0				1.0			
FEB	2.009	.069	.077		54.0				105.0				9.2			
MAR	3.036	.098	.127		100.0				130.0				2.4			
APR	3.727	.124	.163		96.0				110.0				6.7			
MAY	*	*	*	3.240	*	12.0			*	42.0			*	2.5		
JUN	1.922	.063	.072		135.0				95.0				17.0			
JUL	1.905	.062	*		42.0				65.0				15.0			
AUG	.478	.015	.020		120.0				135.0				16.0			
SEP	2.359	.077	.164		207.5				160.0				12.5			
OCT	2.384	.077	.095		170.0				94.0				10.2			
NOV	2.050	.068	.090		223.0				128.0				10.5			
DEC	.556	.018	.024		181.5				136.5				9.1			
TOTAL	25.380 (ESTIMATE)			3.240				2.8				1.7				0.18
AVERAGE		.069			122.8	12.0	90		109.8	42.0	61		9.9	2.5	74	
MAXIMUM			.305	3.240												
NO. OF SAMPLES					16	1			16	1			16	1		

Ministry of the Environment
Ontario

Northwestern Region

⑥

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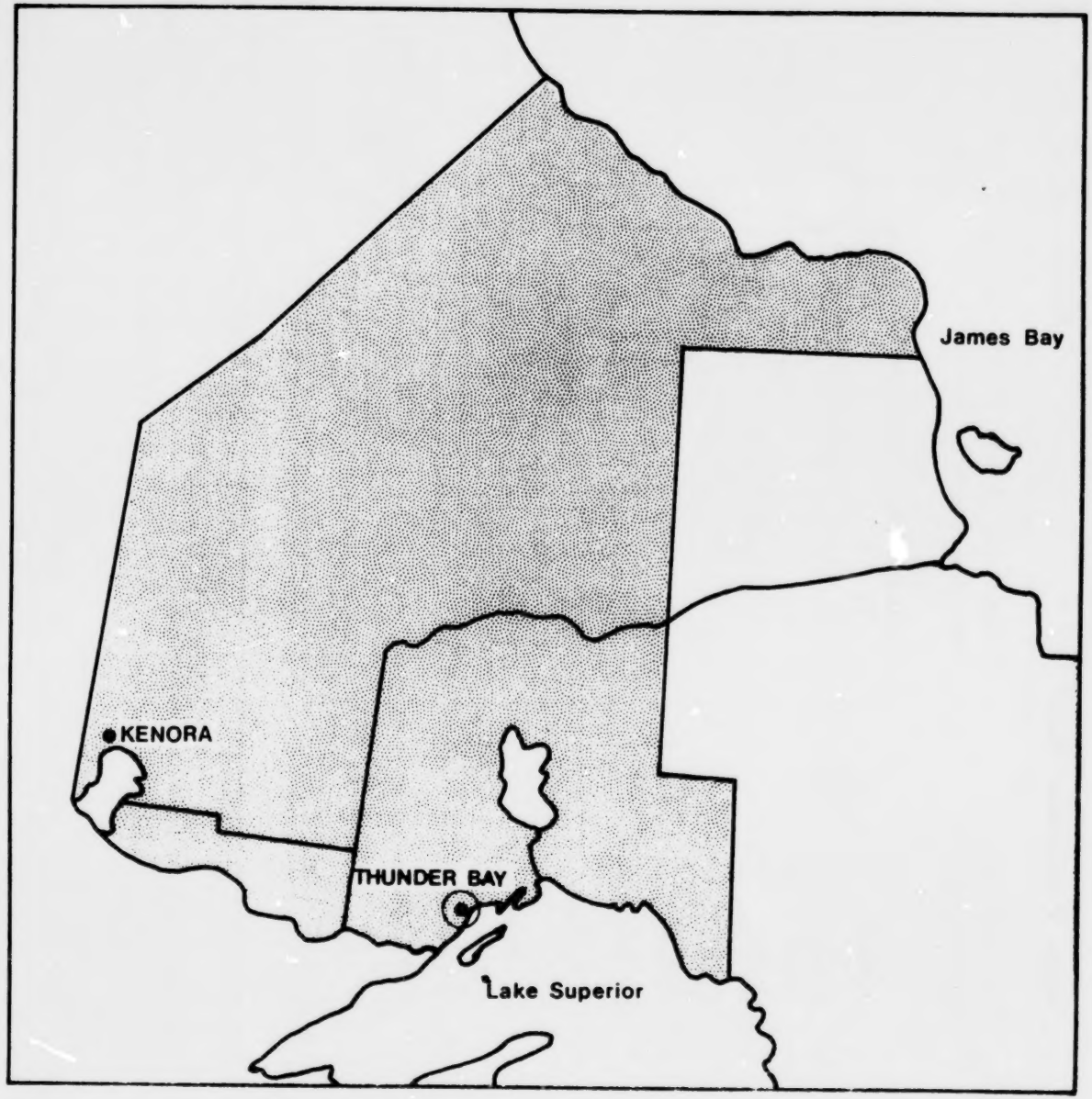
Ministry of the Environment
Ontario

Northwestern Region

⑥



Waste Stabilization Pond

PROJECT : ATWOOD (RAINY RIVER)

Cell Acreage : 8.5 + 8.5 Cell area: 3.44 + 3.44 ha

Total Acreage : 17 Total hectares: 6.88

Commenced operation: August, 1978

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

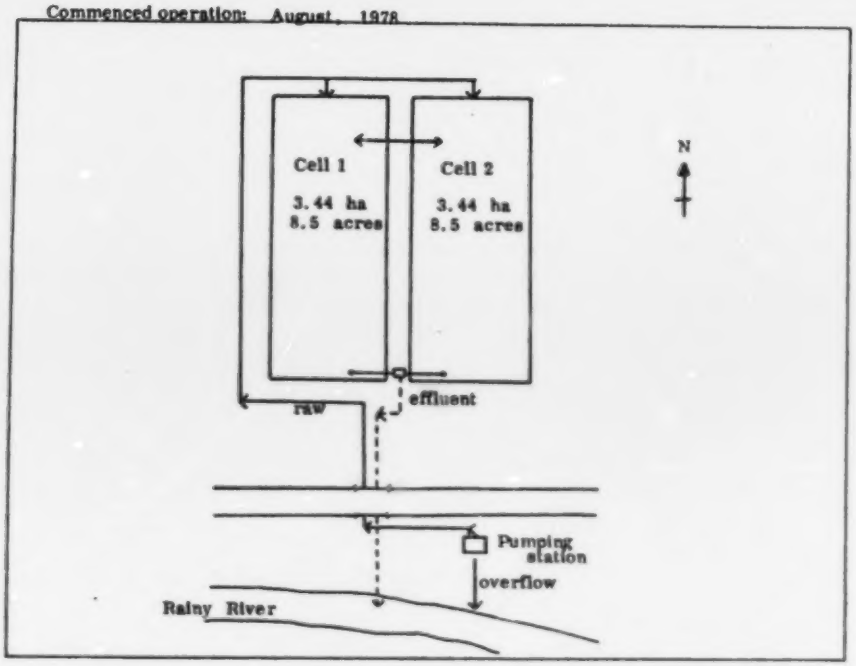
Flow Measurement :

- ■ Flow Meter
- ■ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 485.5 lgpm 36.6 l/s
Pump 2 :485.5 lgpm 36.6 l/s

Total Cap :960 lgpm 72.7 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002292 RAINY RIVER LAGOON

MUNICIPALITY : ATWOOD (RAINY RIVER)
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL (* DATA NOT AVAILABLE)

CURRENT POPULATION :
POPULATION SERVED : 1,000
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.863 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	25.944	.837	.936		*				*				*			
FEB	26.871	.927	1.105	5.121	60.0	*			85.0	*			4.9	*		
MAR	29.421	.949	1.277	4.795	22.0	*			50.0	*			1.6	*		
APR	42.473	1.416	3.173	33.234	46.5	10.0	78		75.0	17.5	76		2.5	1.5	40	
MAY	27.565	.889	.996	34.653	45.0	10.5	76		90.0	155.0	-	-	2.5	.1	-	-
JUN	25.530	.851	1.114		57.3				103.3				3.7			
JUL	25.666	.828	1.156	46.062	18.5	9.0	51		109.2	109.2			2.3	1.1	52	
AUG	28.525	.920	1.558		18.6				61.8				3.1			
SEP	33.793	1.126	1.837	52.914	6.7	6.7			24.2	24.2			4.1	.7	82	
OCT	28.174	.909	1.255		44.3				80.0				3.0			
NOV	29.453	.982	1.273	52.917	28.0	4.8	82		50.0	4.2	91		2.3	.3	86	
DEC	32.584	1.051	1.237		33.3				96.0				2.7			
TOTAL	355.999			229.696				9.4				4.6				
AVERAGE		.974			34.5	8.2	76		74.9	62.0	17		2.9	.9	-	
MAXIMUM			3.173	52.917												
NO. OF SAMPLES					24	22			24	22			24	22		

Waste Stabilization Pond

PROJECT : EMO TWP.

Cell Acreage : 10 — Cell area: 4.0 ha

Total Acreage : 10 — Total hectares: 4.0

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : (Single Cell)

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

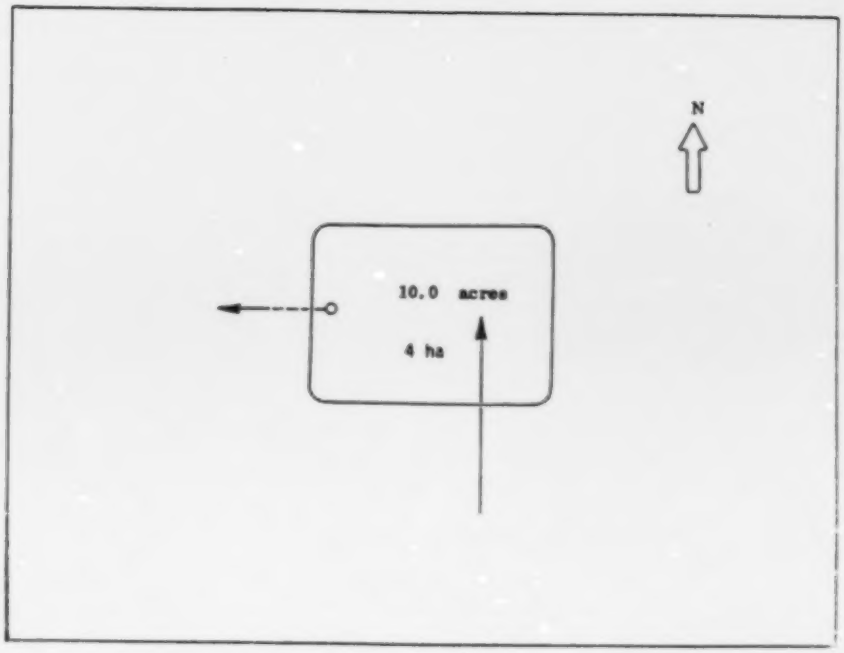
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 250 I gpm 19.9 l/s
Pump 2 : 250 I gpm 19.9 l/s

Total Ca,. : 400 I gpm



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001015 EMO LAGOON

MUNICIPALITY : EMO
REGION : 06 NORTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON SEASONAL

CURRENT POPULATION : 1,035
POPULATION SERVED : 735
PERCENT SERVED : 71.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.909 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	11.722	.378	.429		85.0				100.0				5.5			
FEB	10.924	.377	.491		160.0				120.0				8.1			
MAR	12.763	.412	.675		110.0				140.0				7.3			
APR	15.718	.524	.758		118.3				246.7				8.5			
MAY	12.806	.442	.614	23.814	62.5	22.0	64		125.0	77.5	38		6.3	2.5	60	
JUN	9.996	.333	.409	36.022	126.6	90.0	28		140.0	130.0	7		6.6	4.0	39	
JUL	10.841	.350	.409		85.0				130.0				4.1			
AUG	13.778	.444	.873		106.6				110.0				8.7			
SEP	11.488	.383	.838		72.5				143.0				5.1			
OCT	13.508	.436	.734		95.0				156.7				6.3			
NOV	11.504	.383	.721	50.706	85.0	5.8	93		90.0	4.5	95		5.8	2.0	65	
DEC	9.625	.310	.414	19.502	290.0	7.4	97		590.0	4.5	99		12.5	2.2	82	
TOTAL	144.673			130.044				12.3				17.4				0.6
AVERAGE		.398			116.3	31.3	73		174.2	54.1	68		7.0	2.6	62	
MAXIMUM			.873	50.706												
NO. OF SAMPLES					18	7			18	7			16	7		

CONVENTIONAL LAGOON

ANNUAL

Ministry of the Environment
Ontario

Southwestern Region
(1)

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519-336-4030

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435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Ministry of the Environment
Ontario

Southwestern Region

①

Waste Stabilization Pond

PROJECT : (MITCHELL'S BAY)
DOVER TWP.

Cell Acreage : 5.0 +5.0

Cell area : 2.0 + 2.0 ha

Total Acreage : 10.0

Total hectares: 4.0

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : Series-parallel

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other : Total Retention

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

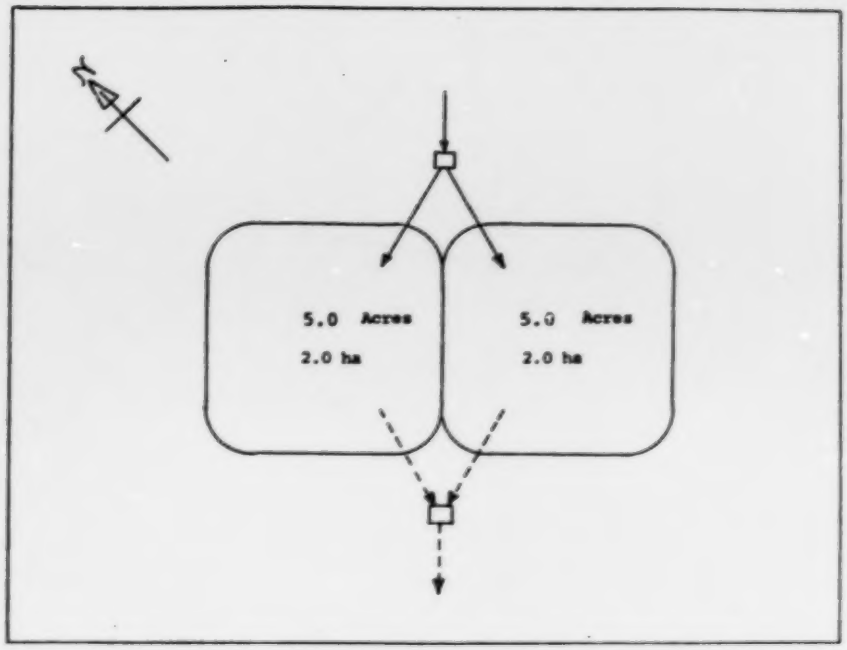
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002087 MITCHELL'S BAY LAGOON

MUNICIPALITY : DOVER (MITCHELL'S BAY)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON ANNUAL COMPLETE RETENTION

NO DISCHARGE IN 1980

CURRENT POPULATION : 250
POPULATION SERVED : 125
PERCENT SERVED : 50.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.104 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<-- FLOW DATA -->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	2.633	.085			60.0				54.0				1.6			
FEB	1.809	.062			60.0				58.0				3.6			
MAR	2.577	.083			58.0				363.0				3.6			
APR	2.500	.083			66.0				48.0				2.7			
MAY	2.024	.065			108.0				61.0				5.5			
JUN	2.764	.092			82.0				95.0				5.5			
JUL	3.433	.110			108.0				106.0				8.1			
AUG	4.246	.137			114.0				175.0				7.4			
SEP	2.834	.094			64.0				64.4				3.2			
OCT	2.952	.095			74.0				72.7				4.6			
NOV	2.873	.095			175.0				164.9				8.0			
DEC	3.163	.102			110.0				191.0				4.6			
TOTAL	33.808															
AVERAGE		.092			89.9				121.0				4.8			
MAXIMUM																
NO. OF SAMPLES					12				12				12			

342

Waste Stabilization Pond

PROJECT : ESSEX (North-East)

Cell Acreage : 12 + 12 Cell area : 4.9 + 4.9 ha

Total Acreage : 24 Total hectares: 9.8

Commenced Operation : Approx. 1963/64

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

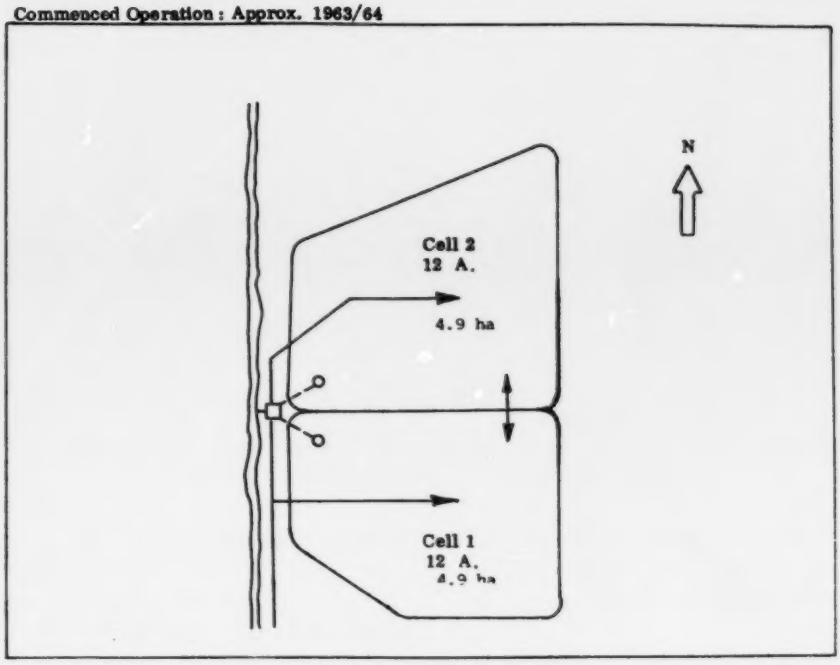
Flow Measurement :

- ☐ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 1000 gpm 75.7 l/s
Pump 2 : 1000 gpm 75.7 l/s

Total Cap : 1000 gpm
75.7 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000203 ESSEX LAGOON N.E. SPRING DISCHARGE

MUNICIPALITY : ESSEX (N.E.)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON ANNUAL PHOSPHORUS REMOVAL

CURRENT POPULATION : 2,500
POPULATION SERVED : 2,300
PERCENT SERVED : 92.0

(* NO SAMPLES ANALYZED)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.081 1000 M3 DESIGN BOD5 : 28.0 KG/HA/DAY DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	28.596	1.240	1.491		*				*				*			
FEB	16.216	.560	1.468		*				*				*			
MAR	43.505	1.403	3.337		*				*				*			
APR	37.820	1.260	2.270	64.812	33.4	12.9	61		51.5	52.5	-	-	2.7	.3	85	
MAY	19.790	.640	2.150	54.010	68.0	*			35.0	*			5.9	*		
JUN	11.260	.363	1.440		48.0				147.0				2.2			
JUL	13.698	.440	1.100		50.0				25.9				5.2			
AUG	23.820	.768	2.640		25.0				15.6				1.8			
SEP	21.352	.712	1.995		5.4				24.0				.6			
OCT	19.230	.620	1.520		*				*				*			
NOV	16.695	.490	1.018	98.032	2.4	13.2	-	-	31.3	59.6	-	-	.5	.8	-	-
DEC	25.926	.836	3.178		*				*				*			
TOTAL	275.908			216.854				5.5				0				0.6
AVERAGE		.778			33.1	13.0	60		47.1	56.0	-		2.7	.6	77	
MAXIMUM			3.337	98.032												
NO. OF SAMPLES					9	4			9	4			9	4		

453

Waste Stabilization Pond

PROJECT : ESSEX (South-West)

Cell Acreage : 12 + 12 + 12 Cell area : 4.9 + 4.9 + 4.9 ha

Total Acreage : 36 Total hectares : 14.7

Commenced Operation : July 1972

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

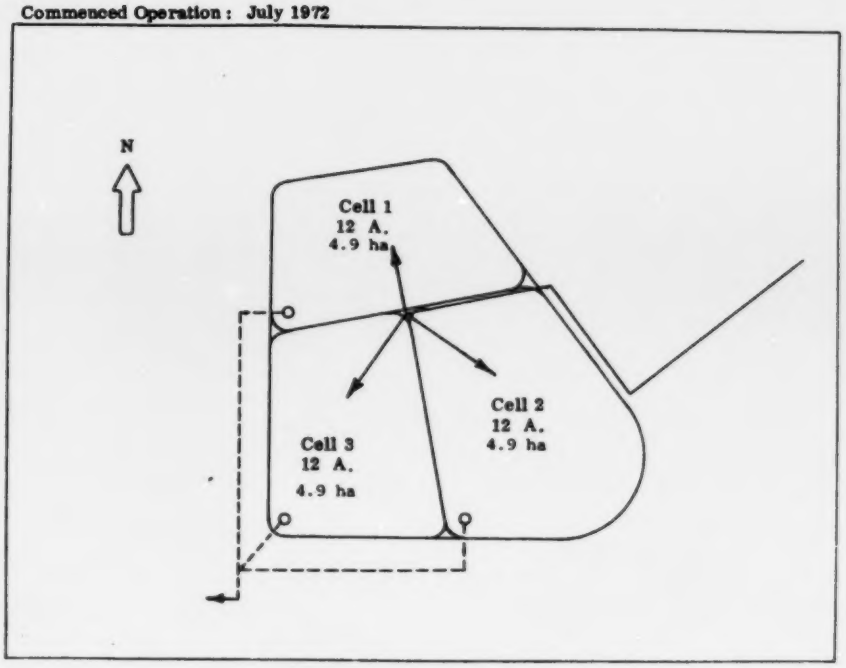
Flow Measurement :

- □ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 1200 I gpm 90.8 l/s
Pump 2 : 1200 I gpm 90.8 l/s

Total Cap : 1200 I gpm
90.8 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000837 ESSEX LAGOON S.W. (P REM CELL 1 APR 30)

MUNICIPALITY : ESSEX (S.W.)
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON ANNUAL PHOSPHORUS REMOVAL

(* NO SAMPLES ANALYZED)

CURRENT POPULATION : 3,755
POPULATION SERVED : 3,900
PERCENT SERVED : 103.8

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.622 1000 M3 DESIGN BOD5 : 22.4 KG/HA/DAY DESIGN SUSP.SOLIDS :

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	22.698	.732	4.220		*				*				*			
FEB	35.781	1.230	1.590		*				*				*			
MAR	57.911	1.868	3.841	34.471	*	*			*	*			*	*		
APR	68.090	2.270	5.500	121.530	44.0	15.3	65		34.0	40.5	-	-	2.9	.7	75	
MAY	51.940	1.675	6.430	101.280	82.0	30.5	62		47.0	19.2	59		6.5	1.5	76	
JUN	67.400	2.200	6.900		11.6				16.5				3.1			
JUL	52.000	1.680	5.460		8.0				25.5				.7			
AUG	90.260	2.910	4.440		7.2				16.1				1.5			
SEP	64.530	2.150	6.390		20.4				39.5				2.1			
OCT	56.780	1.830	3.560		*				*				*			
NOV	73.080	2.440	4.130	122.040	9.6	13.9	-	-	29.6	31.0	-	-	.6	.7	-	-
DEC	78.010	2.520	7.620		*				*				*			
TOTAL	718.480			379.321				4.7				0				1.1
AVERAGE		1.959			26.1	19.9	23		29.7	30.2	-		2.4	.9	60	
MAXIMUM			7.620	122.040												
NO. OF SAMPLES					8	6			8	6			8	6		

Ministry of the Environment
Ontario

West Central Region

②

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Ministry of the Environment
Ontario

West Central Region

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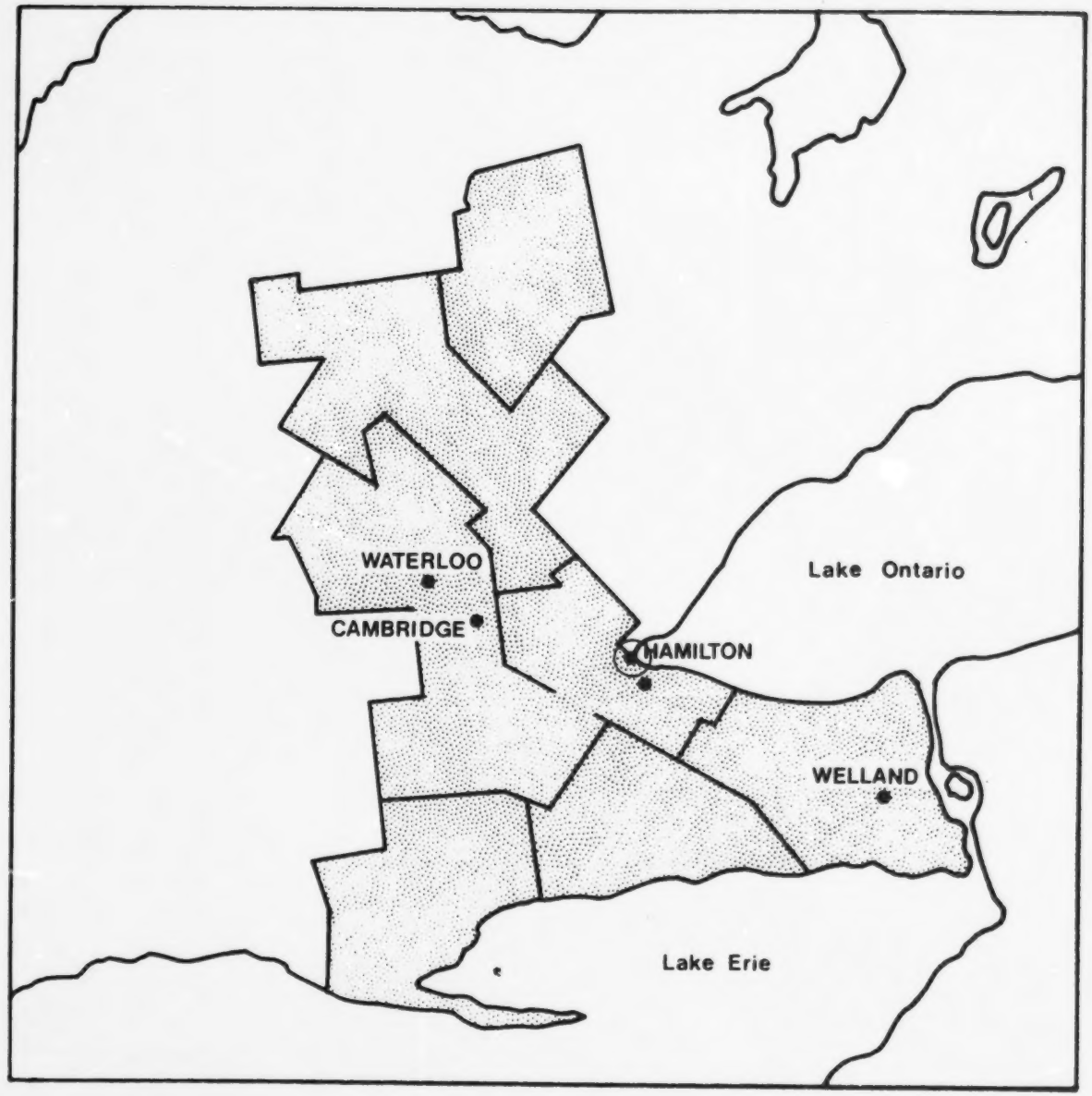


Waste Stabilization Pond

PROJECT: DUNNVILLE (OSWEGO PARK)

Cell Acreage: 3.7

Total Acreage: 3.7

Cell Area: 1.5 ha

Total Hectares: 1.5 ha

Commenced Operation: May 1971

Operation:

- ■ Series
- □ Parallel
- □ Other:

Discharge:

- □ Seasonal
- □ Continuous
- ■ Annual
- □ Other:

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

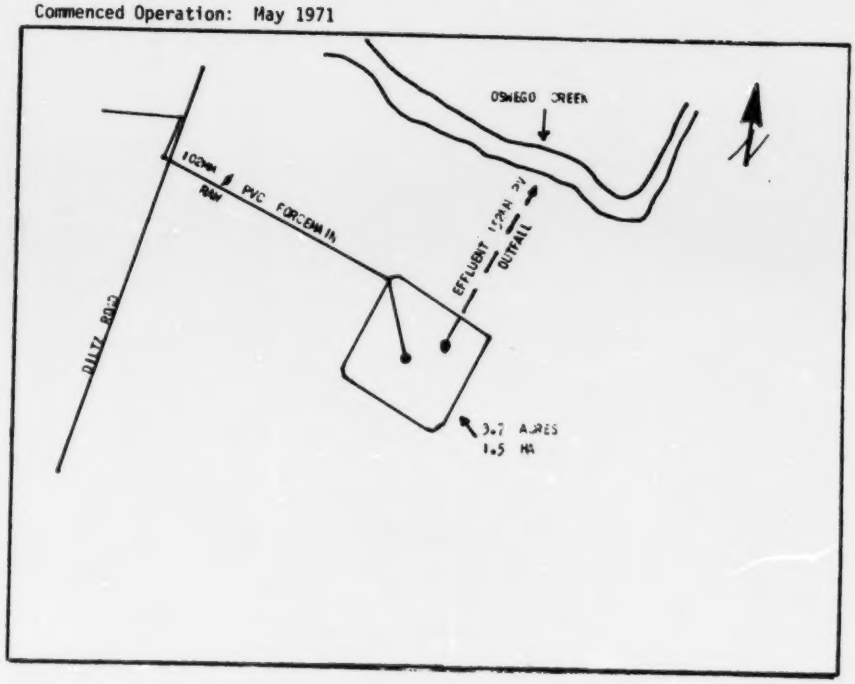
Flow Measurement:

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Statio..

Pump 1: 200 I gpm 15.14 l/s
Pump 2: 200 I gpm 15.14 l/s

Total Cap:



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110003068 OSHEGO PARK LAGOON

MUNICIPALITY : DUNNVILLE (OSHEGO PARK)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : CONVENTIONAL LAGOON ANNUAL PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION :
POPULATION SERVED :
PERCENT SERVED :

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.090 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

DATE	FLOW DATA: TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	BIOCHEMICAL OXYGEN DEMAND: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	SUSPENDED SOLIDS: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	TOTAL PHOSPHORUS: INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	9.826	.316	.522		145.0				180.0				12.0			
FEB	4.067	.140	.347		230.0				370.0				16.0			
MAR	5.067	.163	.387	31.690	330.0	63.6	80		365.0	523.0	-	-	17.0	5.7	66	
APR	10.526	.350	.448	.380	118.0	19.0	83		115.0	60.0	47		7.8	2.8	64	
MAY	6.560	.211	.323		210.0				185.0				5.8			
JUN	5.244	.174	.357		157.0				217.0				11.0			
JUL	5.912	.190	.408		280.0				370.0				15.0			
AUG	1.346	.044	.060		*				*				*			
SEP	1.012	.033	.048		80.0				90.0				7.0			
OCT	1.226	.058	.073		*				*				*			
NOV	2.008	.066	.171		105.0				120.0				7.8			
DEC	1.393	.045	.075		160.0				160.0				3.4			
TOTAL	54.187			32.070				7.6								0.3
AVERAGE		.149			181.5	41.3	77		217.2	291.5	-		10.2	4.2	58	
MAXIMUM			.522	31.690												
NO. OF SAMPLES					11	2			11	2			11	2		

Ministry of the Environment
Ontario

Southeastern Region

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REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Ministry of the Environment
Ontario

Southeastern Region

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Waste Stabilization Pond

PROJECT : ALFRED

Cell Acreage : 22.1 + 22.1 Cell area: 8.9 + 8.9 ha

Total Acreage : 44.2 Total hectares: 17.8

Commenced Operation : Nov. 1975

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ■ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

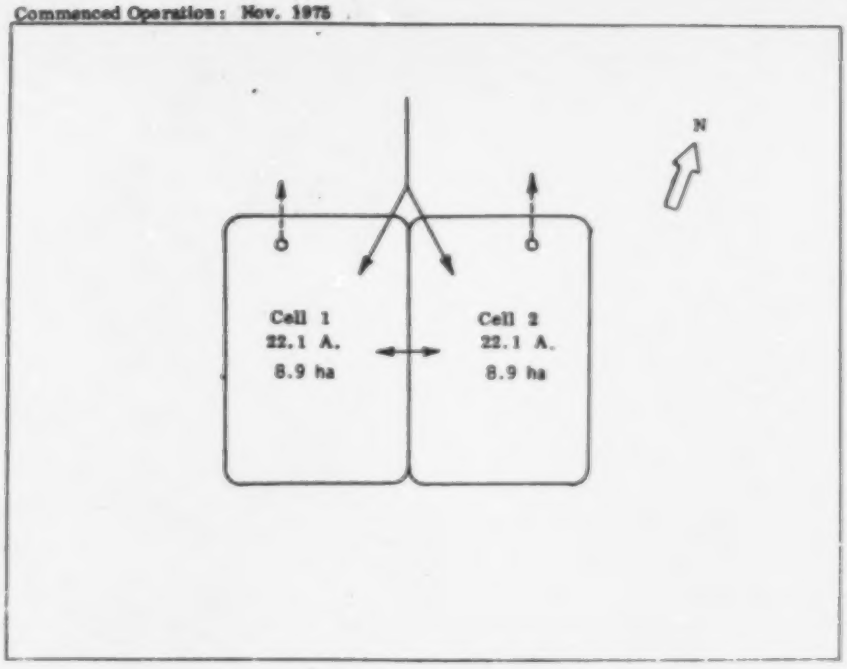
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : .437 l gpm 33.1 l/s
Pump 2 : 437 l gpm 33.1 l/s

Total Cap : 699 l gpm
52.9 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001836 ALFRED LAGOON

MUNICIPALITY : ALFRED
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON ANNUAL

CURRENT POPULATION : 1,100
POPULATION SERVED : 1,050
PERCENT SERVED : 95.4

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.713 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

DATE	FLOW DATA: TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	BIOCHEMICAL OXYGEN DEMAND: INFLUENT MG/L	BOD EFFLUENT MG/L	BOD %	BOD REDUCTION 1000 KG	SUSPENDED SOLIDS: INFLUENT MG/L	SS EFFLUENT MG/L	SS %	SS REDUCTION 1000 KG	TOTAL PHOSPHORUS: INFLUENT MG/L	TP EFFLUENT MG/L	TP %	TP REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	14.409	.465	.589		113.0				112.5				6.5			
FEB	11.677	.403	.430		142.5				122.5				7.9			
MAR	15.173	.489	.823		160.0				135.0				8.5			
APR	14.742	.491	.539	*	115.0	12.5	89		118.0	19.0	83		7.2	2.9	59	
MAY	14.479	.467	.590	*	65.0	5.9	90		42.0	23.0	45		4.8	1.2	75	
JUN	13.211	.440	.538		71.0				81.0				4.7			
JUL	15.783	.509	.873		220.0				152.5				8.8			
AUG	13.673	.441	.676		128.0				180.0				3.6			
SEP	14.479	.482	.515		160.0				97.5				10.5			
OCT	14.110	.455	.953		112.5				175.0				8.4			
NOV	14.848	.495	.543		130.0				175.0				10.5			
DEC	15.726	.507	.764		182.5				152.5				11.5			
TOTAL	172.304							21.4				18.5				1.0
AVERAGE		.470			133.2	9.2	93		128.4	21.0	83		7.7	2.0	73	
MAXIMUM			.873													
NO. OF SAMPLES					36	15			36	15			36	15		

Ministry of the Environment
Ontario

Northeastern Region

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REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

DISTRICT OFFICES

North Bay
1500 Fisher St.
705-476-1001

Sault Ste. Marie
445 Albert St. E.
705-949-4640

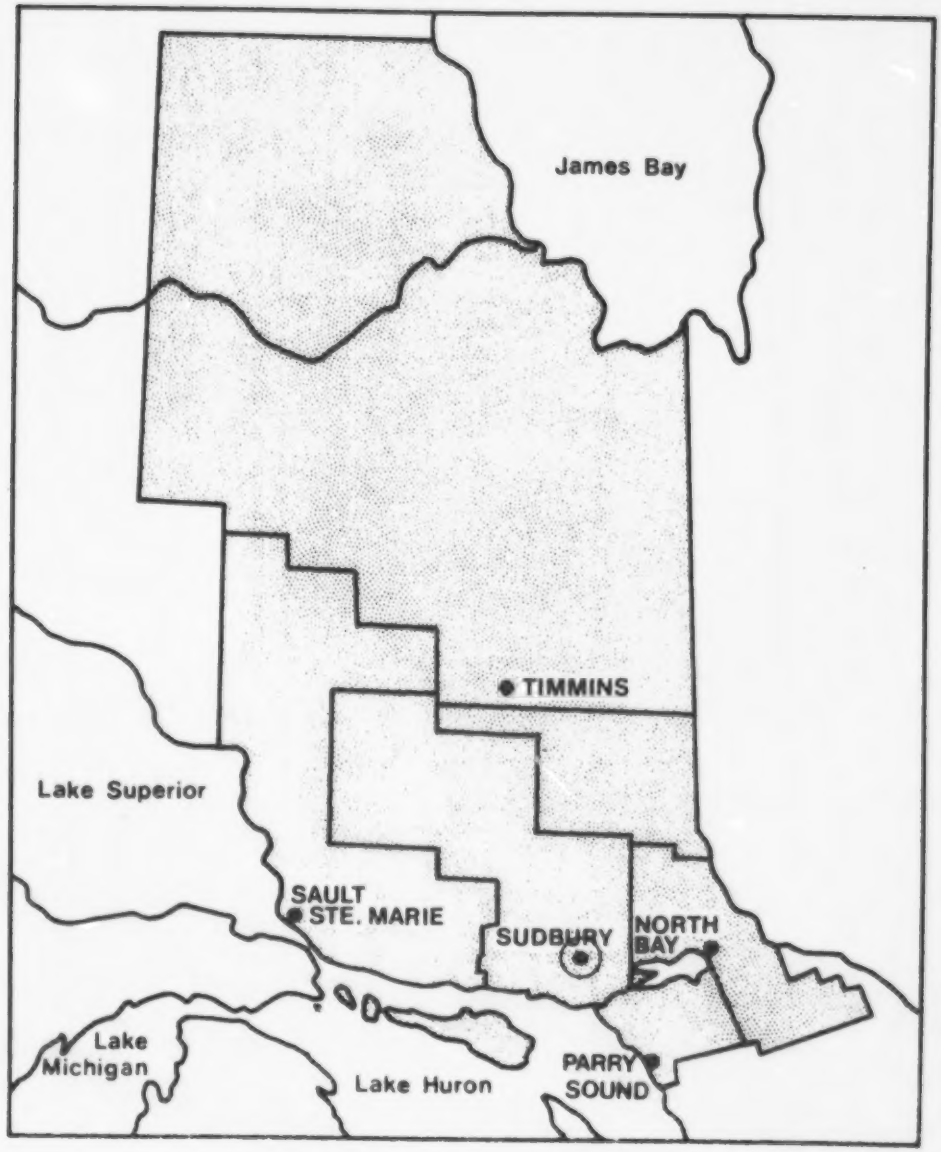
Timmins
83 Algonquin Blvd. W.
705-264-9474

Parry Sound
74 Church St.
705-746-2139

Ministry of the Environment
Ontario

Northeastern Region

⑤



Waste Stabilization Pond

PROJECT : COSBY MASON & MARTLAND

Cell Acreage : 8.5 + 8.5 Cell area: 3.4 + 3.4 ha

Total Acreage : 17 Total hectares: 6.8

Commenced operation: August, 1979

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

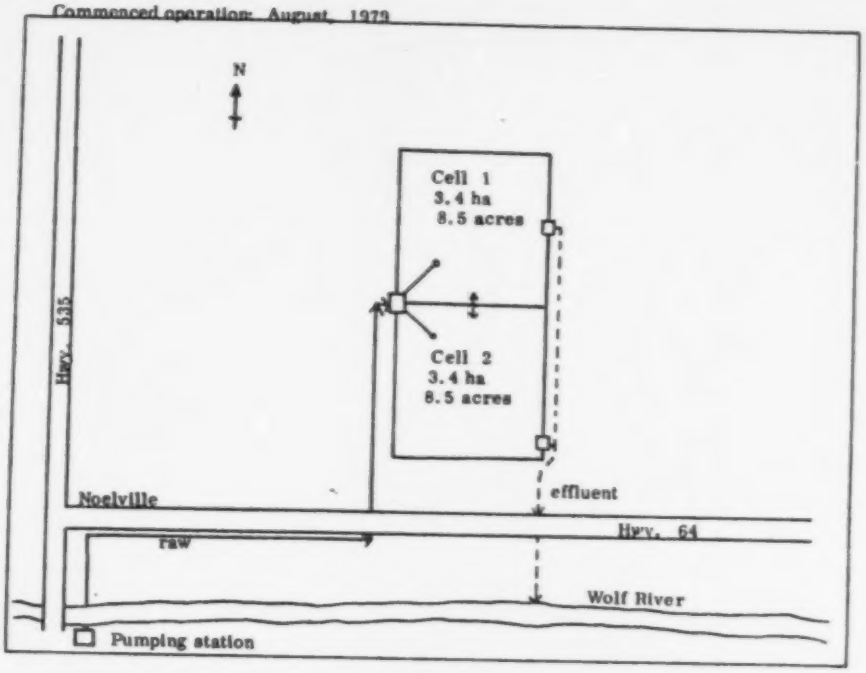
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 200 Igpm 15.1 l/s
Pump 2 : 200 Igpm 15.1 l/s

Total Cap : 400 Igpm 30.3 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002425 NOELVILLE LAGOON

START-UP AUGUST 1979

MUNICIPALITY : COSBY MASON & MARTLAND
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON ANNUAL PHOSPHORUS REMOVAL CONTROLLED EFFLUENT RELEASE

(* NO DATA AVAILABLE)

CURRENT POPULATION : 1,602
POPULATION SERVED : 549
PERCENT SERVED : 34.2

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.181 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->								
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO W/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	5.291	.171			*				*				*			
FEB	4.050	.140			210.0				235.0				17.0			
MAR	4.759	.154			170.0				185.0				6.4			
APR	5.986	.200			110.0				148.0				5.5			
MAY	5.573	.179			260.0				235.0				6.7			
JUN	8.770	.204	.292		245.0				155.0				9.0			
JUL	4.880	.157	.191		*				*				*			
AUG	4.568	.147	.191		190.0				140.0				5.9			
SEP	5.400	.180	.204		115.0				115.0				7.3			
OCT	5.870	.189	.232		118.0				115.0				6.6			
NOV	5.400	.180	.204		109.0				210.0				4.7			
DEC	5.490	.177	.191		126.0				125.0				4.0			
TOTAL	66.037															
AVERAGE		.173			165.3				166.3				7.3			
MAXIMUM			.292													
NO. OF SAMPLES					13				13				13			

Waste Stabilization Pond

PROJECT : SUNDRIDGE

Cell Acreage : 10.0 + 10.0 Cell area: 4.0 + 4.0 ha

Total Acreage : 20.0 Total hectares: 8.0

Commenced Operation; Jan 1978

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal (180 day retention)
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001961 SUNRIDGE LAGOON

MUNICIPALITY : SUNDRIDGE
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON ANNUAL PHOSPHORUS REMOVAL

(*DATA NOT AVAILABLE)

CURRENT POPULATION : 702
POPULATION SERVED : 840
PERCENT SERVED : 119.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.654 1000 M3 DESIGN BOD5 : * MG/L DESIGN SUSP.SOLIDS :

	<— FLOW DATA —>				<—BIOCHEMICAL OXYGEN DEMAND—>				<— SUSPENDED SOLIDS —>				<— TOTAL PHOSPHORUS —>			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	14.040	.450	.500		*				*				*			
FEB	12.750	.439	.500		*				*				*			
MAR	15.170	.515	.690		*				*				*			
APR	20.940	.698	.830		*				*				*			
MAY	17.300	.558	.700	47.402	*	5.8			*	16.7			*	.4		
JUN	16.580	.553	.730		35.0				85.0				4.6			
JUL	18.300	.590	.700		*				*				*			
AUG	12.970	.580	.660		95.0				75.0				3.3			
SEP	16.600	.553	.650		72.0				65.0				3.8			
OCT	18.520	.597	.640		15.0				20.0				1.4			
NOV	17.030	.567	.640	47.402	51.0	12.0	76		45.0	5.7	87		2.7	.2	92	
DEC	15.820	.510	.530		21.5				95.0				3.9			
TOTAL	196.020			94.804				7.7				10.4				0.6
AVERAGE		.551			48.2	8.9	81		64.1	11.2	82		3.2	.3	89	
MAXIMUM			.830	47.402												
NO. OF SAMPLES					10	4			10	4			10	4		

Waste Stabilization Pond

PROJECT : THESSALON

Cell Acreage : 22.5 + 13.5

Cell area: 9.11 + 5.46 ha

Total Acreage : 36.0

Total hectares: 14.57

Commenced operation: October, 1979

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ■ Batch
- ☐ Continuous
- ☐ None

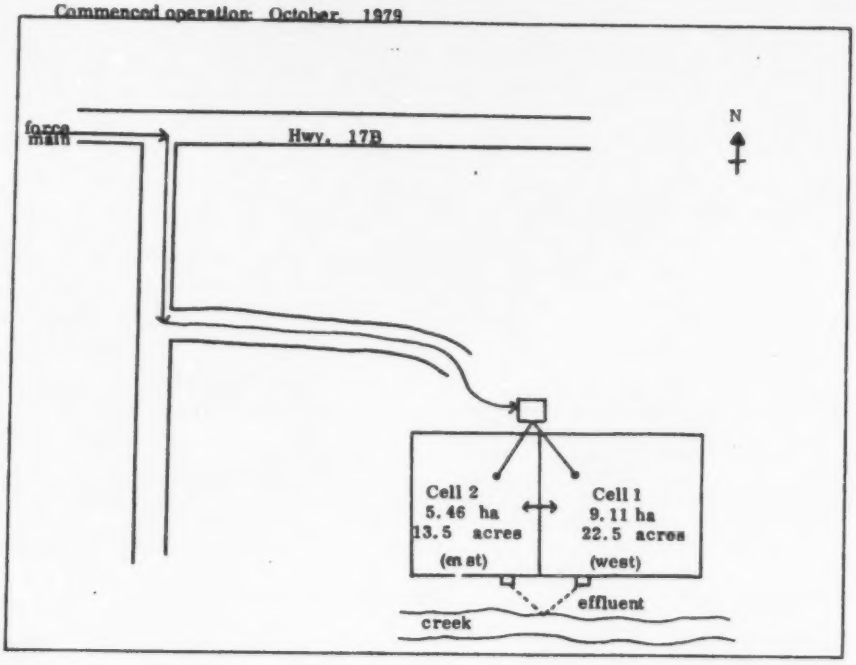
Flow Measurement :

- ☐ Flow Meter
- ■ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 1251 Igpm 94.7 l/s
Pump 2 : 1251 Igpm 94.7 l/s

Total Cap : 2501 Igpm 189.3 l/s



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110002434 THESSALON LAGOON

START-UP OCTOBER 1979

MUNICIPALITY : THESSALON
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : CONVENTIONAL LAGOON ANNUAL PHOSPHORUS REMOVAL

(* = DATA NOT AVAILABLE)

CURRENT POPULATION : 1,672
POPULATION SERVED : 1,356
PERCENT SERVED : 81.1

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.636 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA			---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	28.000	.903			*				*				*			
FEB	28.000	1.000			*				*				*			
MAR	28.000	.903			*				*				*			
APR	28.000	.930		83.460	*	11.0			*	32.0			*	*		
MAY	22.600	.728			*				*				*			
JUN	24.043	.801			*				*				*			
JUL	22.729	.733	.857		*				*				*			
AUG	22.103	.713	.860		57.5				97.5				6.8	*		
SEP	22.300	.743	.830		50.0				70.0				6.1	*		
OCT	24.060	.776	.991		32.0				50.0				2.4	*		
NOV	22.707	.757			*				*				*			
DEC	23.153	.747			*				*				*			
TOTAL	295.695			83.460				10.4				12.0				
AVERAGE		.811			46.5	11.0	76		72.5	32.0	55		5.1			
MAXIMUM			.991	83.460												
NO. OF SAMPLES					4	1			4	1			4			

LAGOON & SPRAY

Ministry of the Environment
Ontario

Central Region

③

REGIONAL OFFICE

DON MILLS
150 Ferrand Dr.
416-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Rd.
705-726-1730

Muskoka-Haliburton
Gravenhurst Shopping Centre
705-687-3408

Peterborough
139 George St. N.
705-743-2972

Halton-Peel
1226 White Oaks Blvd.
Oakville
416-844-5747

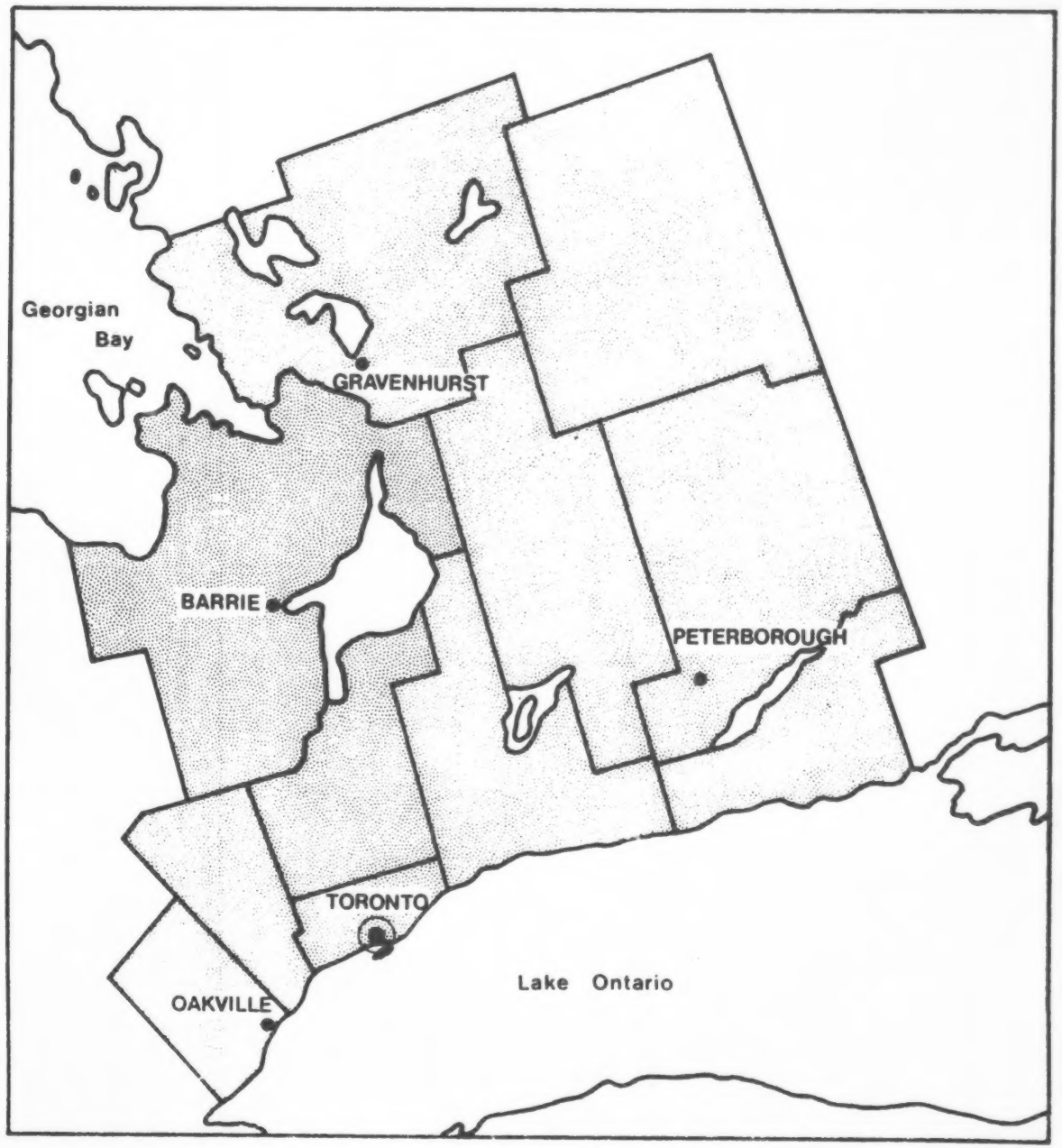
SUB-OFFICE

Huntsville
100 Main St. E.
705-789-2386

Ministry of the Environment
Ontario

Central Region

③



Waste Stabilization Pond

PROJECT : OMEMEE

472

Cell Acreage : 9.0 + 9.0 Cell area: 3.6 + 3.6 ha

Total Acreage : 18.0 Total hectares 7.2

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other : Spray Irrigation

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

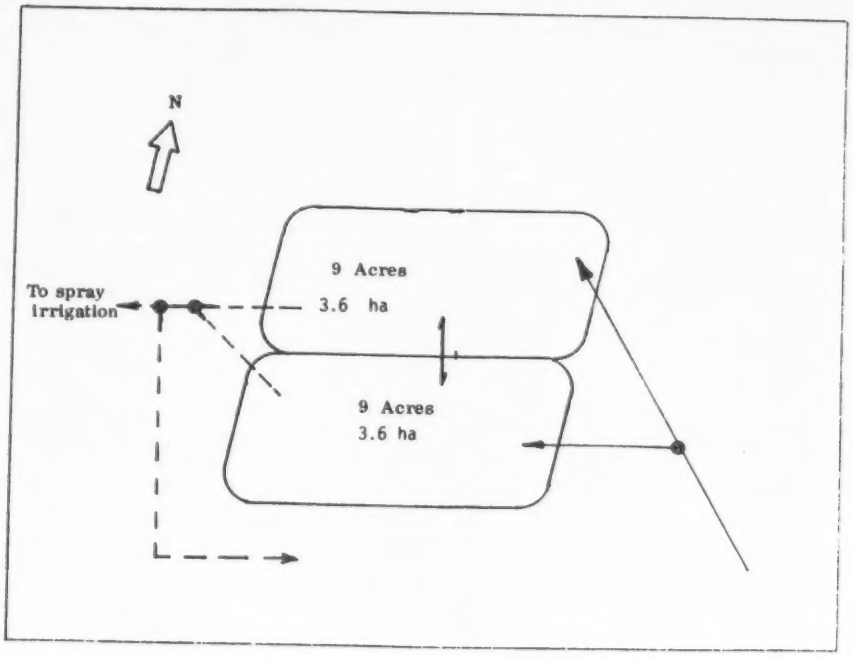
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001630 OMEMEE LAGOON

MUNICIPALITY : OMEMEE
REGION : 03 CENTRAL

TREATMENT FACILITY : LAGOON AND SPRAY PHOSPHORUS REMOVAL

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 786
POPULATION SERVED : 600
PERCENT SERVED : 76.3

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.613 1000 M3 DESIGN BOD5 : 170.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	<— FLOW DATA				—><-BIOCHEMICAL OXYGEN DEMAND-><— SUSPENDED SOLIDS —><— TOTAL PHOSPHORUS —>											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	%	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	6.046	.195	.318		110.0				150.0				6.2			
FEB	3.818	.136	.150		300.0				180.0				8.0			
MAR	7.410	.239	.932		92.0				130.0				7.7			
APR	10.910	.364	.750		34.0				55.0				3.2			
MAY	7.592	.244	.350	*	26.0	21.0	19		55.0	10.0	81		4.3	2.0	53	
JUN	8.546	.285	.218	*	92.0	12.0	86		130.0	26.0	80		7.8	3.7	52	
JUL	6.546	.211	.600	*	56.0	15.0	73		45.0	8.0	82		5.0	3.3	34	
AUG	5.001	.161	.232		14.0				40.0				2.5			
SEP	5.364	.179	.300	*	64.0	2.0	96		65.0	5.0	92		3.6	3.6		
OCT	6.001	.194	.418	*	145.0	2.5	98		340.0	5.0	98		9.1	2.8	69	
NOV	7.728	.258	.409	*	56.0	2.0	96		95.0	5.0	94		3.5	1.9	45	
DEC	8.865	.285	.618		98.0				145.0				4.4			
TOTAL	83.827							6.8				9.2				0.2
AVERAGE		.229			90.5	9.0	89		119.1	9.8	91		5.4	2.8	47	
MAXIMUM			.932													
NO. OF SAMPLES					12	6			12	6			12	6		

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Ministry of the Environment
Ontario

Southeastern Region

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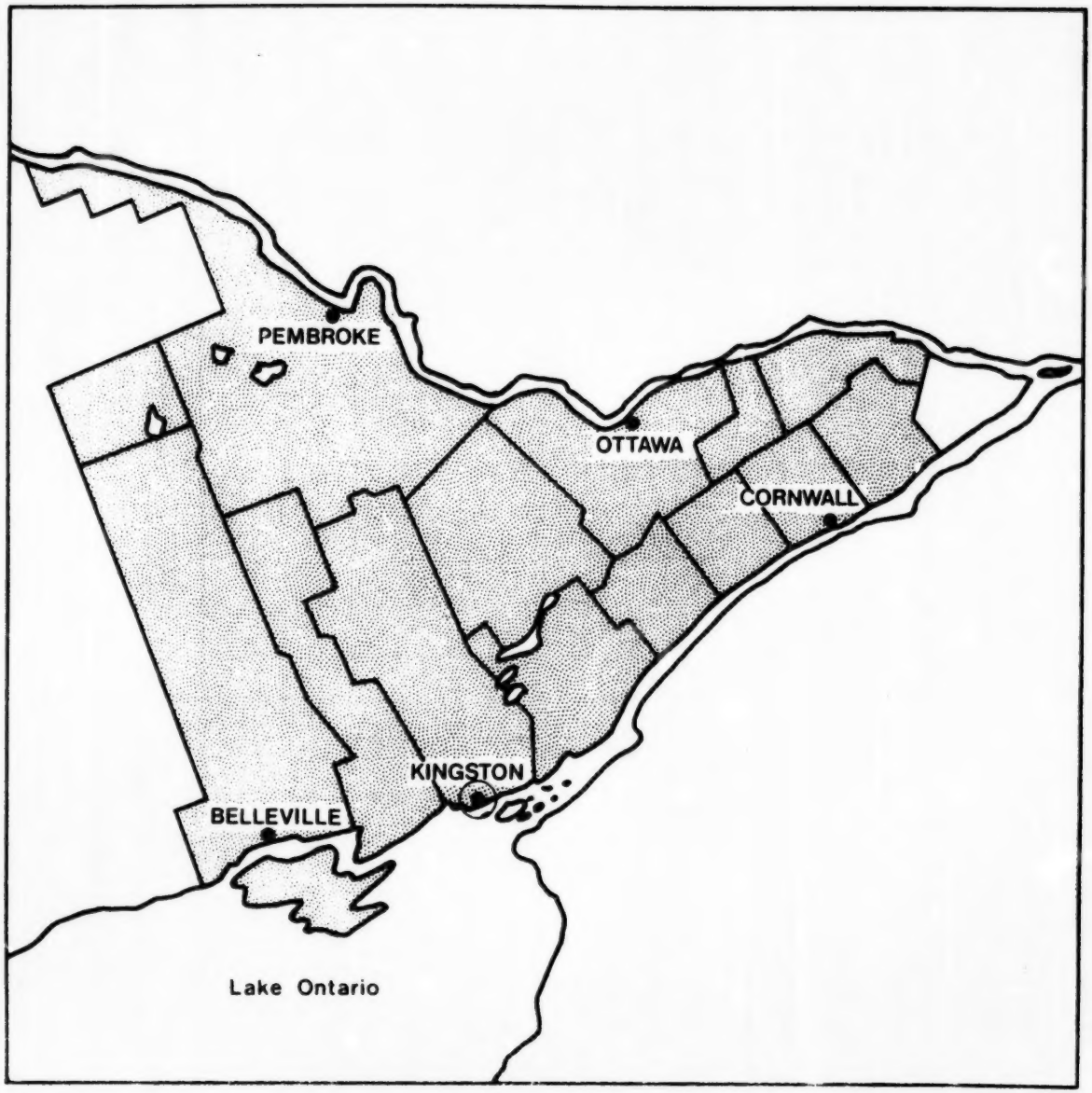


Waste Stabilization Pond

PROJECT : LEEDS & LANSDOWNE

476

Cell Acreage : 6.3 + 5.8 — Cell area: 2.5 + 2.3 ha

Total Acreage : 12.1 — Total hectares: 4.8

Commenced Operation: January 1977

Operation :

- ☐ Series
- ☐ Parallel
- ☐ Other :

Discharge :

- ■ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other : Spray Irrigation

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ☐ None

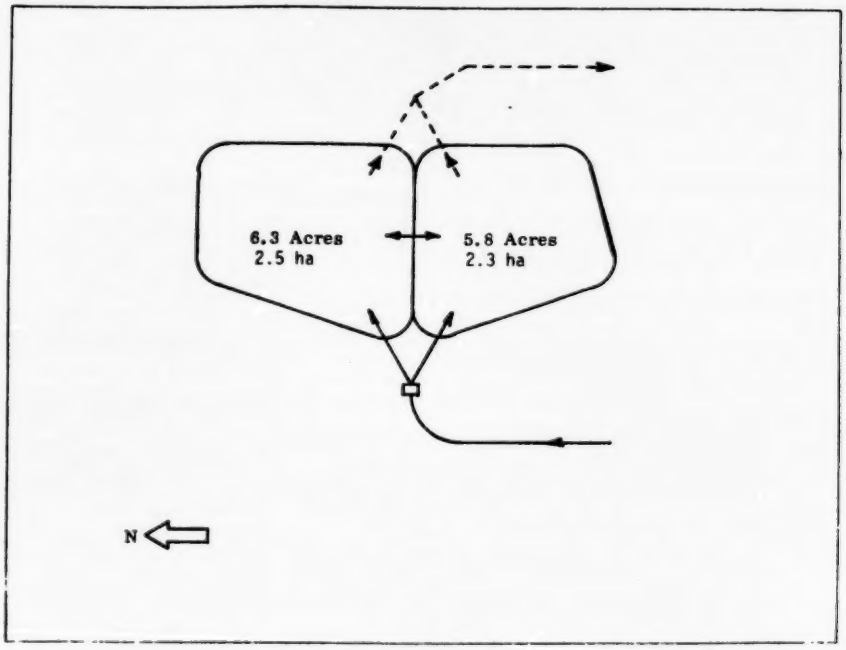
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 235 Igpm 17.8 l/s
Pump 2 : 235 Igpm 17.8 l/s

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001934 LANSDOWNE LAGOON

MUNICIPALITY : LEEDS & LANSDOWNE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : LAGOON AND SPRAY

CURRENT POPULATION : 600
POPULATION SERVED : 900
PERCENT SERVED : 150.0

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.500 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO SPRAY SITE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	3.514	.113	.127		90.0				95.0				8.0			
FEB	3.305	.114	.126		*				*				*			
MAR	4.743	.153	.328		*				*				*			
APR	4.604	.154	.330		*				*				*			
MAY	3.643	.118	.127	.402	*	2.5			*	8.0			*	.6		
JUN	2.807	.094	.110	4.577	*	*			*	*			*	*		
JUL	2.650	.085	.130	6.055	*	*			*	*			*	*		
AUG	2.794	.090	.110	.027	*	*			*	*			*	*		
SEP	2.683	.089	.107	2.462	*	*			*	*			*	*		
OCT	2.930	.095	.128	11.551	*	.7			*	5.0			*	.3		
NOV	3.032	.101	.129		*				*				*			
DEC	3.659	.118	.218		*				*				*			
TOTAL	40.364			25.074				3.6				3.6				0.3
AVERAGE		.110			90.0	1.6	98		95.0	6.5	93		8.0	.4	94	
MAXIMUM			.330	11.551												
NO. OF SAMPLES					1	6			1	6			1	6		

AERATED CELL + LAGOON

Ministry of the Environment
Ontario

Southwestern Region
(1)

REGIONAL OFFICE

LONDON
985 Adelaide St. S.
519-681-3600

DISTRICT OFFICES

Windsor
250 Windsor Ave
519-254-5129

Sarnia
242A Indian Rd. S.
519-336-4030

Owen Sound
1180 20th St. E.
519-371-2901

SUB-OFFICE

Chatham
435 Grand Ave W.
519-352-5107

Clinton
c/o Ministry of
Agriculture & Food
519-482-3428

Ministry of the Environment
Ontario

Southwestern Region

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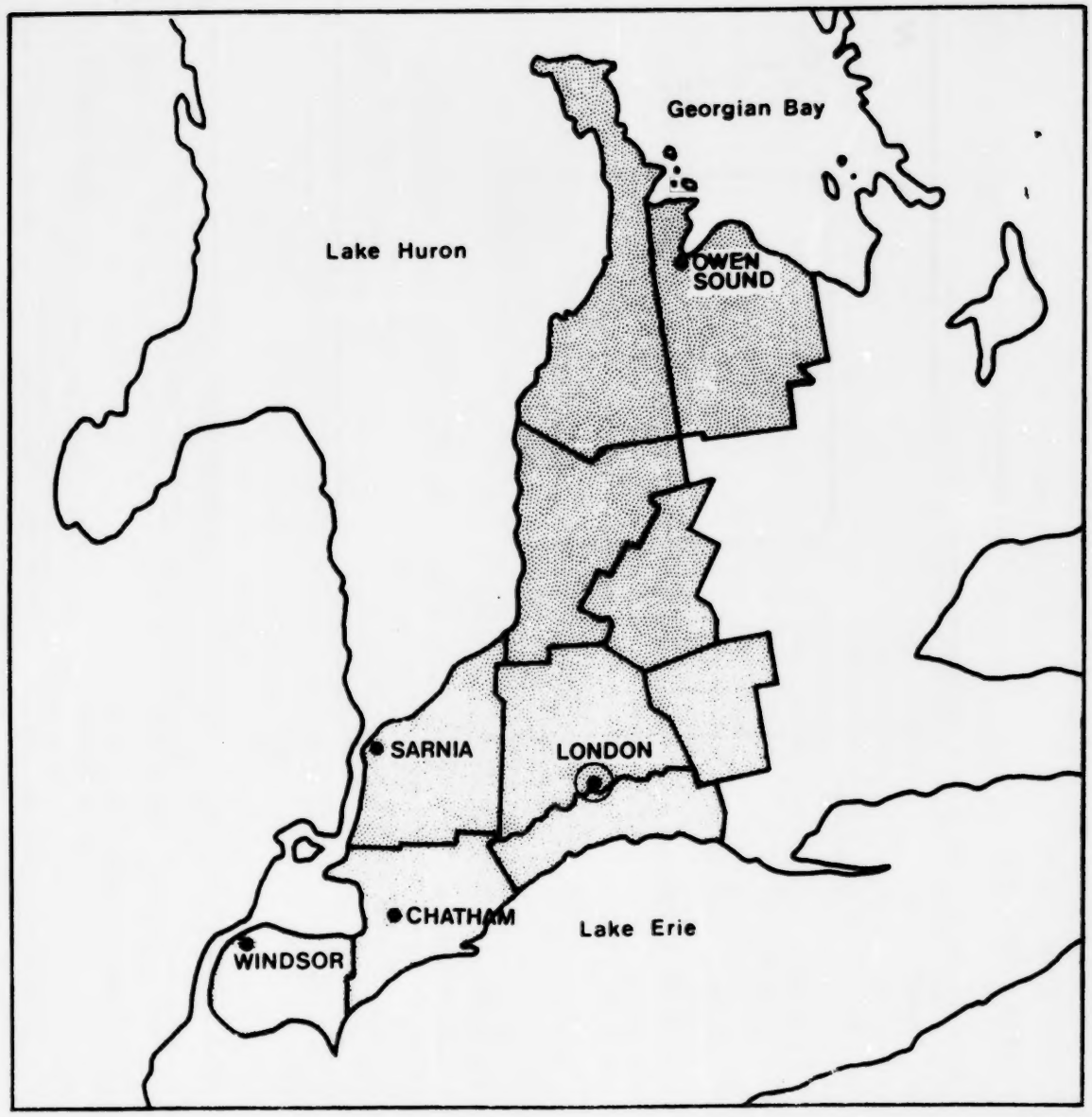


Waste Stabilization Pond

PROJECT : DURHAM

Cell Acreage : 0.7
Total Acreage : 0.7

Cell area: 0.3 ha
Total hectares: 0.3

Commenced Operation: 1966

Operation :

- ☐ Series
- ☐ Parallel
- ■ Other : Single aerated cell

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

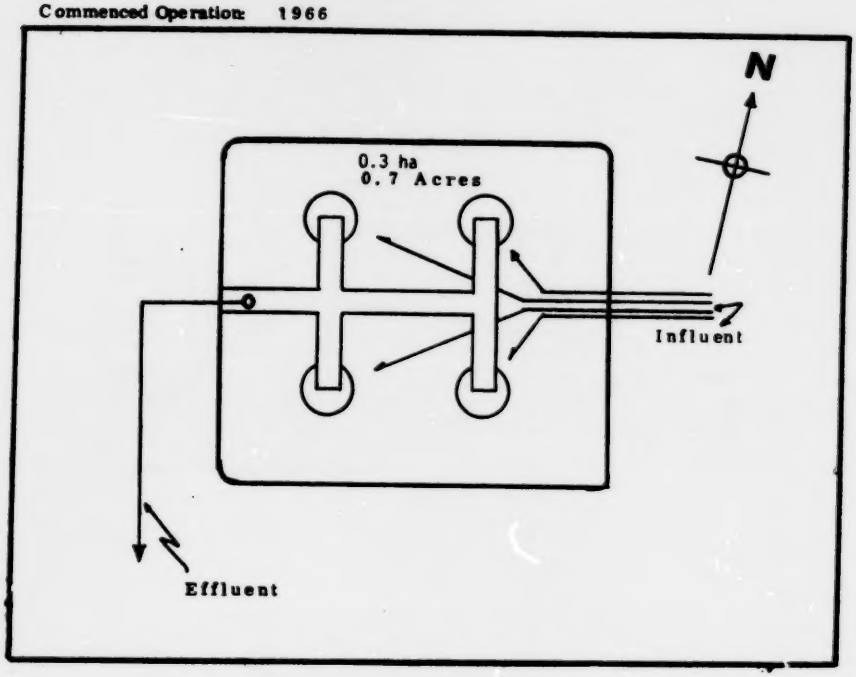
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 700 Igpm 50.3 l/s
Pump 2 : 700 Igpm 50.3 l/s

Total Cap .



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000999 DURHAM

MUNICIPALITY : DURHAM
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON
CONTINUOUS DISCHARGE

CURRENT POPULATION : 2,472
POPULATION SERVED : 1,700
PERCENT SERVED : 68.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

(* NO SAMPLE ANALYZED)
(** DATA NOT AVAILABLE)

DESIGN CAPACITY : 2,482 1000 M3 DESIGN BOD5 : 200.0 MG/L DESIGN SUSP.SOLIDS : 200.0 MG/L

	FLOW DATA				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	32.150	1.040	1.380	**	150.0	*			1070.0	*			4.2	*		
FEB	26.890	.930	1.060	**	97.0	27.5	71	1.8	1253.5	29.5	97	32.9	4.4	4.2	3	.005
MAR	36.720	1.180	1.670	**	175.0	35.5	79	5.1	769.0	44.0	94	26.6	4.4	3.9	9	.016
APR	43.600	1.450	1.970	**	162.0	37.0	77	5.4	107.0	44.0	58	2.7	3.2	3.2	-	-
MAY	33.860	1.090	1.310	**	128.0	41.0	67	2.9	270.0	39.0	85	7.8	2.9	3.9	-	-
JUN	32.740	1.090	2.610	**	111.0	27.5	75	2.7	162.5	24.5	84	4.5	5.5	4.1	25	.046
JUL	38.170	1.230	2.560	**	98.5	33.0	66	2.5	146.9	59.9	59	3.3	4.1	4.8	-	-
AUG	38.760	1.250	2.270	**	66.0	26.0	60	1.5	12.7	55.4	-	-	5.6	4.2	25	.084
SEP	29.580	.990	1.270	**	285.0	24.1	91	7.7	353.2	33.3	90	9.4	5.9	4.0	32	.056
OCT	26.560	.860	1.270	**	245.0	28.0	88	5.7	578.4	35.7	93	14.4	7.6	4.2	44	.080
NOV	18.300	.610	.680	**	116.0	24.0	79	1.6	122.9	29.0	76	1.7	7.4	4.1	44	.060
DEC	63.460	2.050	4.010	**	133.0	28.5	78	6.6	314.2	9.7	96	19.3	4.3	3.1	27	.076
TOTAL	420.790							43.9				122.8				.603
AVERAGE		1.148			147.2	30.1	79		430.0	36.7	91		4.9	3.9	19	
MAXIMUM			4.010													
NO. OF SAMPLES					23	23			23	23			23	23		

Waste Stabilization Pond

PROJECT : KINCARDINE

Cell Acreage : 16.0 + 16.0 Cell area: 6.5 + 6.5 ha

Total Acreage : 32.0 Total hectares: 13.0

Commenced Operation: JAN, 1965 Aerated Cell added in 1978

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- ■ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

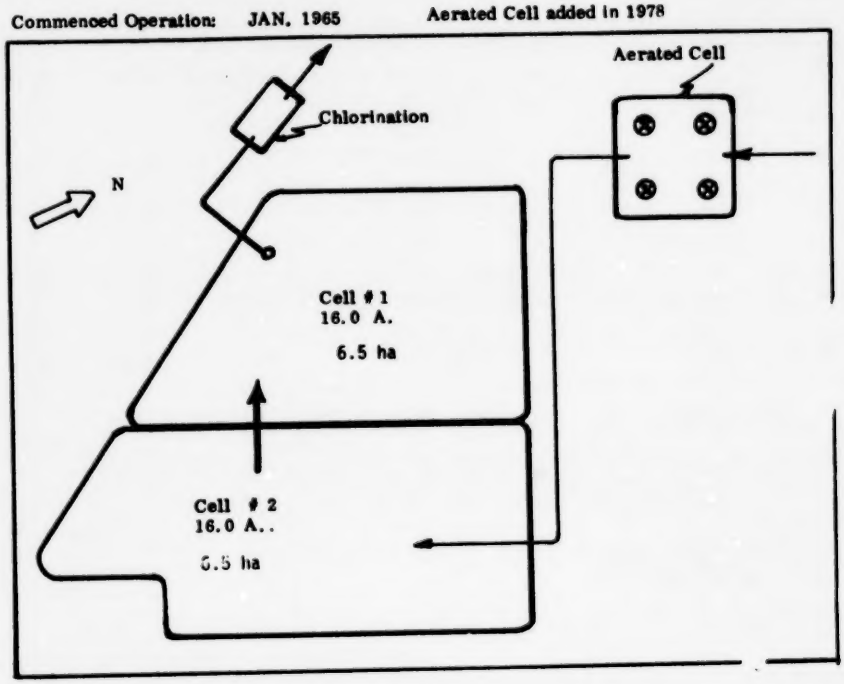
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 :
Pump 2 :

Total Cap :



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEN — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000864 KINCARDINE LAGOON

MUNICIPALITY : KINCARDINE
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON

CURRENT POPULATION : 5,532
POPULATION SERVED : 4,150
PERCENT SERVED : 75.0

(* DATA NOT AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.909 1000 M3 DESIGN BOD5 : 130.0 MG/L DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND-><--- SUSPENDED SOLIDS ---><--- TOTAL PHOSPHORUS --->											
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	80.630	2.600	3.270	51.700	101.0	13.8	86	7.0	86.0	11.0	87	6.0	6.0	4.1	31	.153
FEB	72.610	2.500	2.980	42.330	125.0	15.0	88	7.9	141.5	4.3	96	9.9	7.2	4.8	32	.171
MAR	99.390	3.210	6.370	74.060	93.7	20.0	78	7.3	107.3	5.0	95	10.1	5.6	4.9	11	.063
APR	89.800	2.990	4.230	70.360	100.0	17.4	82	7.4	80.0	22.0	72	5.2	5.2	3.4	33	.155
MAY	63.790	2.060	3.180	*	82.0	14.0	82	4.3	89.0	9.8	88	5.0	6.2	2.9	52	.208
JUN	76.350	2.550	6.630	33.950	92.0	12.2	86	6.0	110.5	11.0	90	7.5	5.9	2.7	54	.244
JUL	66.350	2.140	2.660	28.610	120.3	8.9	92	7.3	106.9	7.5	92	6.5	7.0	4.3	38	.179
AUG	63.180	2.040	2.560	24.730	123.0	9.4	92	7.1	77.5	3.7	95	4.6	5.5	2.9	47	.164
SEP	63.540	2.120	2.890	34.440	150.0	4.8	96	9.2	151.1	4.0	97	9.3	7.2	2.7	62	.286
OCT	79.170	2.550	4.010	38.280	108.5	3.1	97	8.3	73.7	2.4	96	5.6	6.4	2.1	67	.340
NOV	63.360	2.110	2.500	28.900	169.0	4.2	97	9.8	89.7	3.1	96	5.4	7.2	1.9	73	.336
DEC	75.100	2.420	4.560	33.200	109.0	5.5	94	7.7	67.3	4.3	93	4.7	7.8	2.9	62	.368
TOTAL	893.270			460.560				89.9				80.5				2.667
AVERAGE		2.441			113.7	10.6	90		98.3	7.3	92		6.4	3.3	48	
MAXIMUM			6.630	74.060												
NO. OF SAMPLES					25	25			25	25			25	25		

Waste Stabilization Pond

PROJECT : LISTOWEL

Cell Acreage : 1.5 + 42.4 + 26.6 Cell area: 0.6 + 17.2 + 10.8 ha

Total Acreage : 70.5

Commenced Operation : (Facultative Cells) : Sept. 1961
Expansion : (Aerated Cell) : Sept. 1971

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- □ Seasonal
- □ Continuous
- □ Annual
- ■ Other : Dec-Apr : Continuous
  July-Oct : Spray Irr.

Phosphorus Removal:

- □ Batch
- ■ Continuous
- □ None

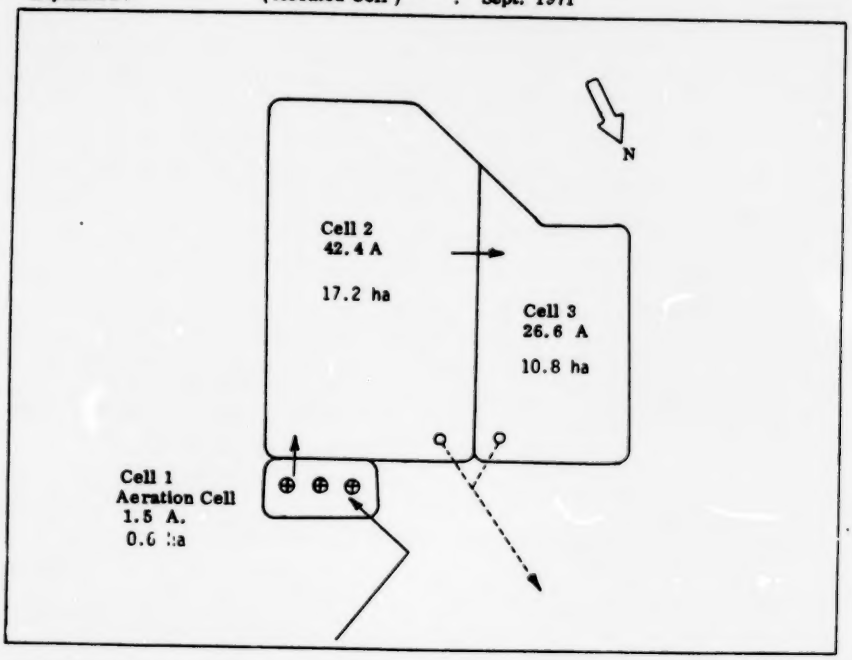
Flow Measurement :

- ■ Flow Meter
- □ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 972 Us gpm 61.3 l/s
Pump 2 : 972 Us gpm 61.3 l/s

Total Cap : 1750 Us gpm
110.4 l/s



Signifigant Industries : Campbell Soups Ltd

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000409 LISTOWEL LAGOON

MUNICIPALITY : LISTOWEL
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON
LAGOON AND SPRAY
PHOSPHORUS REMOVAL

CURRENT POPULATION : 4,96
POPULATION SERVED : 4,50
PERCENT SERVED : 90.

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 4.918 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<-- FLOW DATA -->				<-BIOCHEMICAL OXYGEN DEMAND->				<-- SUSPENDED SOLIDS -->				<-- TOTAL PHOSPHORUS -->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	160.382	5.173	8.546	86.510	140.0	12.7	90		110.3	22.0	80		4.6	.7	83	
FEB	135.016	4.655	6.091		154.5				120.0				4.2			
MAR	187.749	6.055	10.955	45.460	99.0	27.0	72		78.0	18.5	76		3.0	1.0	65	
APR	215.344	7.178	9.773	377.165	130.0	18.2	86		95.6	32.3	66		2.7	.8	69	
MAY	164.793	5.315	7.319		110.5				72.5				3.6			
JUN	139.971	4.665	6.182		118.0				81.0				3.5			
JUL	134.925	4.352	6.137		265.0				186.2				5.5			
AUG	108.331	3.494	6.046		81.0				89.5				5.5			
SEP	120.696	4.023	8.046		223.0				133.2				3.7			
OCT	155.154	5.004	7.182		164.5				86.9				5.1			
NOV	156.927	5.230	7.955	95.466	367.5	9.0	97		856.2	24.1	97		7.1	.7	89	
DEC	170.884	5.512	10.001	227.299	240.0	13.3	94		161.4	18.5	88		5.5	5.6	-	
TOTAL	1850.172			831.900				293.9				276.6				
AVERAGE		5.055			174.4	16.0	90		172.5	23.0	86		4.5	1.7	60	
MAXIMUM			10.955	377.165												
NO. OF SAMPLES					26	32			26	33			26	24		

Waste Stabilization Pond

PROJECT: THORNBURY

Cell Acreage: 4.38 + 9.67 + 10.19 Cell area: 1.8 + 3.9 + 4.1 ha

Total Acreage: 24.24 Total hectares: 9.8

Commenced Operation: August 1975

Operation:

- ☐ Series
- ☐ Parallel
- ■ Other: series-parallel

Discharge:

- ☐ Seasonal
- ☐ Continuous
- ☐ Annual
- ■ Other: semi-annual

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

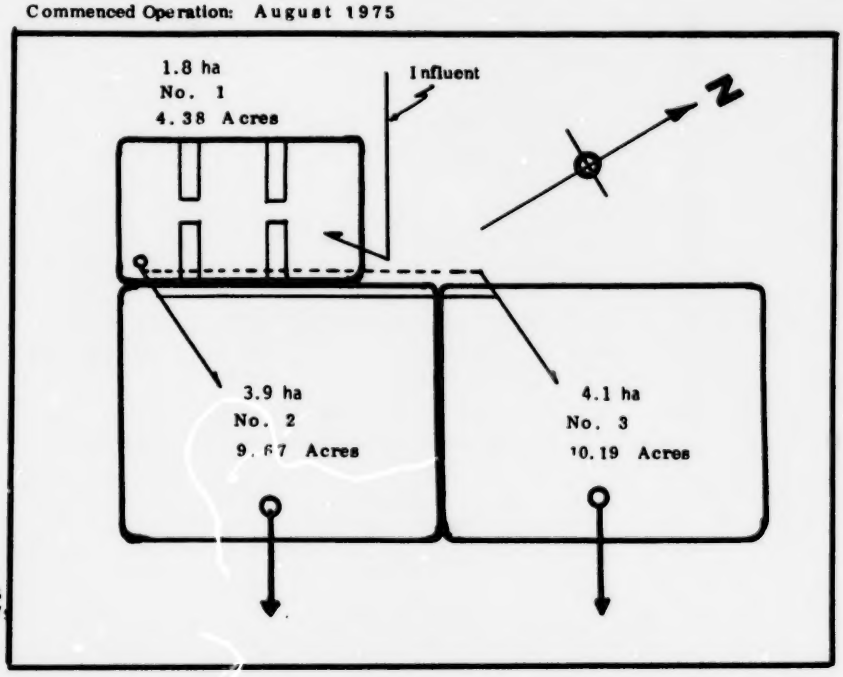
Flow Measurement:

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1: 920 Igpm 69.6 l/s
Pump 2: 920 Igpm 69.6 l/s

Total Cap:



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001890 THORNBURY LAGOON

MUNICIPALITY : THORNBURY
REGION : 01 SOUTHWESTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON

CURRENT POPULATION : 1,500
POPULATION SERVED : 1,470
PERCENT SERVED : 98.0

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 1.272 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

(*DATA NOT AVAILABLE)

** 3600 MG/L OCT TO NOV FOR GEORGIAN BAY FRUIT GROWERS LTD. + TOWN

164 MG/L DEC TO SEPT FOR TOWN ONLY

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	FLOW DATA	BIOCHEMICAL OXYGEN DEMAND INFLUENT MG/L	BIOCHEMICAL OXYGEN DEMAND EFFLUENT MG/L	BIOCHEMICAL OXYGEN DEMAND REDUCTION %	BIOCHEMICAL OXYGEN DEMAND REDUCTION 1000 KG	SUSPENDED SOLIDS INFLUENT MG/L	SUSPENDED SOLIDS EFFLUENT MG/L	SUSPENDED SOLIDS REDUCTION %	SUSPENDED SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS REDUCTION %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/80-DEC/80																	
JAN	35.224	1.136	1.584	35.224		1211.0	28.9	97		379.0	41.0	89		3.4	1.8	46	
FEB	25.930	.894	1.114	**		12.0	31.6	-	-	10.5	30.0	-	-	.8	2.0	-	-
MAR	43.552	1.404	3.108	**		518.0	37.5	92		162.0	29.0	82		2.0	2.0		
APR	48.867	1.628	2.973	**		470.0	55.0	88		152.0	38.0	75		2.0	1.4	30	
MAY	33.272	1.109	1.572	**		42.0	29.0	30		124.0	63.0	49		2.8	2.1	25	
JUN	33.245	1.108	2.016			36.0				128.0				2.0			
JUL	42.390	1.367	3.485			24.0				33.3				2.7			
AUG	34.849	1.124	1.706	**		44.0	3.5	92		45.4	4.6	89		2.7	2.0	26	
SEP	29.604	.986	1.400			10.0				11.5				.9			
OCT	46.913	1.513	2.206	46.913		1295.0	1.9	99		405.3	4.3	98		3.6	.3	94	
NOV	41.312	1.377	1.646	41.312		1060.0	4.9	99		377.0	6.2	98		2.6	.4	84	
DEC	42.791	1.380	2.661	42.791		353.0	14.0	96		157.9	9.8	93		2.3	.6	72	
TOTAL	457.949			166.240					193.2				64.3				0.4
AVERAGE		1.252				422.9	22.9	94		165.4	25.1	84		2.3	1.4	39	
MAXIMUM			3.485	46.913													
NO. OF SAMPLES						30	28			30	27			30	28		

Ministry of the Environment
Ontario

West Central Region

②

REGIONAL OFFICE

HAMILTON
119 King St. W.
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Welland
637-641 Niagara St. N.
416-735-0431

Cambridge
400 Clyde Road
P.O. Box 219
519-623-2080

Ministry
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West Central Region

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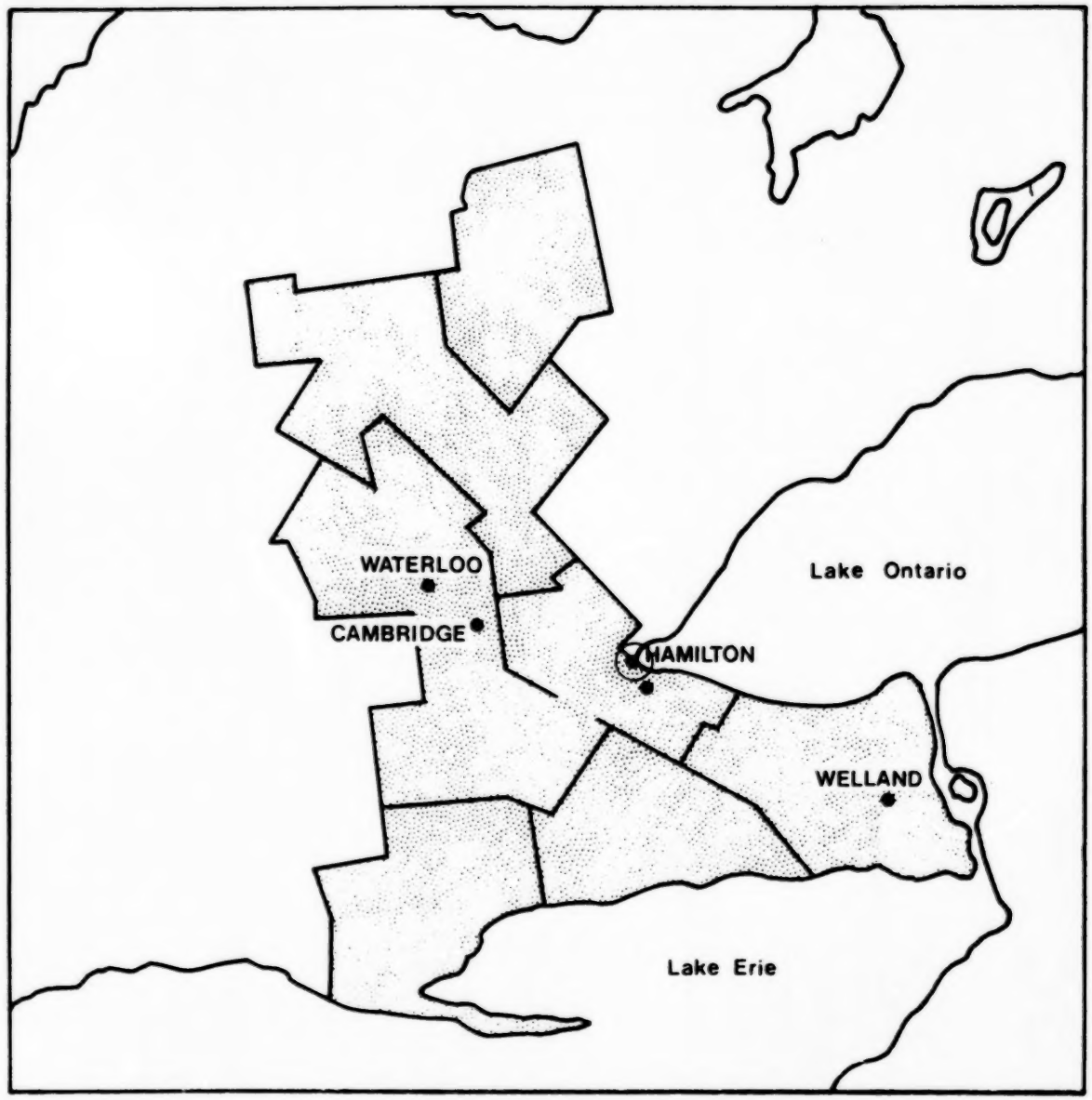


Waste Stabilization Pond

PROJECT : WATERFORD

Cell Acreage : 2.2 (Aeration) + 16.5 Cell area: 0.9 + 6.7 ha

Total Acreage : 18.7 Total hectares: 7.6

Commenced Operation (Facultative Cell) : Aug 1962
Expansion (Aeration Cell) : Jan 1975

Operation :

- ☐ Series
- ☐ Parallel (Aerated Lagoon)
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ■ Continuous
- ☐ None

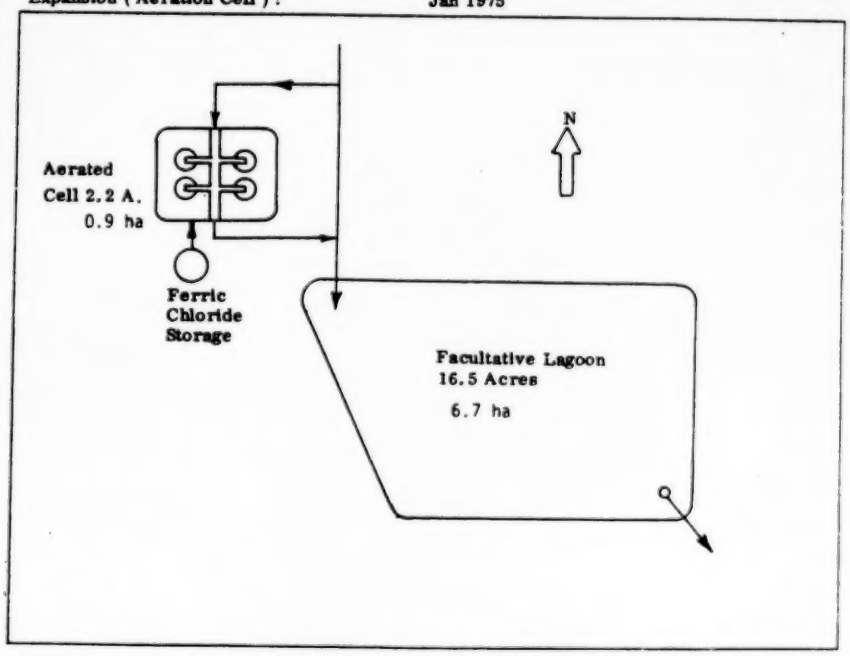
Flow Measurement :

- ■ Flow Meter
- ☐ Integrator
- ☐ Pump Timer

Pumping Station

Pump 1 : 1500 US gpm 94.7 l/s
Pump 2 : 1500 US gpm 94.7 l/s

Total Cap: N A



Signifigant Industries : Canadian Canners, Toronto Mill, Stock Woolen Mill.

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110001195 NANTICOKE (WATERFORD)

MUNICIPALITY : NANTICOKE (WATERFORD)
REGION : 02 WEST-CENTRAL

TREATMENT FACILITY : AERATED CELL PLUS LAGOON
PHOSPHORUS REMOVAL

CURRENT POPULATION : 18,829
POPULATION SERVED : 2,200
PERCENT SERVED : 11.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 2.136 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	BOD INFLUENT MG/L	BOD EFFLUENT MG/L	BOD REDUCTION %	BOD REDUCTION 1000 KG	SUSP.SOLIDS INFLUENT MG/L	SUSP.SOLIDS EFFLUENT MG/L	SUSP.SOLIDS REDUCTION %	SUSP.SOLIDS REDUCTION 1000 KG	TOTAL PHOSPHORUS INFLUENT MG/L	TOTAL PHOSPHORUS EFFLUENT MG/L	TOTAL PHOSPHORUS REDUCTION %	TOTAL PHOSPHORUS REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	48.630	1.569	1.947	48.630	31.0	13.4	56	.8	38.4	25.8	32	.6	2.8	1.9	29	.040
FEB	49.472	1.706	2.143	49.472	83.0	13.1	84	3.4	57.0	19.8	65	1.8	3.4	1.4	58	.099
MAR	56.006	1.807	2.584	56.006	82.0	13.6	83	3.8	44.8	42.3	5	.1	2.6	2.0	21	.032
APR	47.229	1.574	2.334	47.229	54.0	22.6	58	1.4	55.6	55.2			3.7	1.9	46	.081
MAY	45.309	1.460	2.575	45.309	37.0	24.6	33	.5	45.2	37.0	18	.3	3.4	2.2	35	.054
JUN	30.148	1.005	1.643	30.148	15.5	25.1	-	-	10.0	49.5	-	-	1.2	2.6	-	-
JUL	32.173	1.037	1.524	32.173	36.6	26.8	26	.3	39.2	47.5	-	-	2.0	3.5	-	-
AUG	44.563	1.438	1.888	44.563	87.5	19.8	77	3.0	66.1	47.2	28	.8		2.1		
SEP	40.672	1.310	2.116	40.672	37.0	20.8	43	.6	20.7	41.5	-	-	1.4	2.4	-	-
OCT	30.547	.985	1.852	30.547	45.0	17.4	61	.8	26.6	48.5	-	-	2.7	1.6	40	.034
NOV	28.768	.958	1.538	28.768	70.0	13.2	81	1.6	29.9	49.8	-	-		.5		
DEC	30.104	.974	1.359	30.104	105.0	19.0	81	2.5	40.2	48.2	-	-	2.9	1.2	58	.051
TOTAL	483.621			483.621				19.2				3.8				.391
AVERAGE		1.319			56.9	19.1	66		39.4	42.6	-		2.6	1.9	24	
MAXIMUM			2.584	56.006												
NO. OF SAMPLES					23	23			35	35			32	35		

Ministry of the Environment
Ontario

Southeastern Region

④

REGIONAL OFFICE

KINGSTON
133 Dalton St.
613-549-4000

DISTRICT OFFICES

Belleville
15 Victoria Ave.
613-962-9208

Cornwall
4 Montreal Rd.
613-933-7402

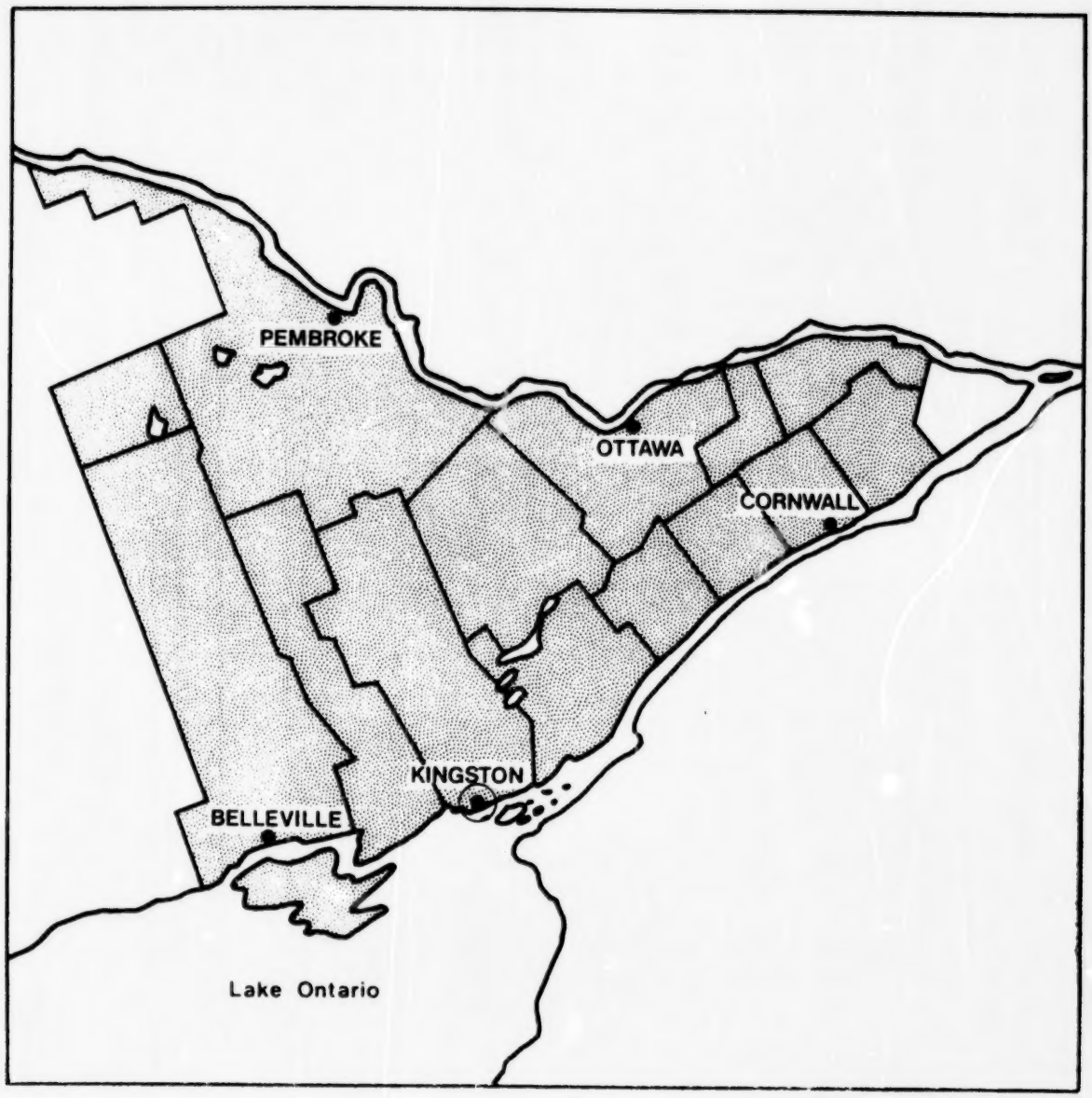
Ottawa
2378 Holly Lane
613-521-3450

Pembroke
1000 MacKay St.
P.O. Box 67
613-732-3643

Ministry of the Environment
Ontario

Southeastern Region

④



Waste Stabilization Pond

PROJECT : ALEXANDRIA

Cell Acreage : 13.6 + 12.8 + 16.0

Total Acreage : 42.4

Cell area: 5.5 + 5.2 + 6.5

Total hectares: 17.2

Commenced Operation : N/A

Operation :

- ☐ Series
- ■ Parallel
- ☐ Other :

Discharge :

- ☐ Seasonal
- ■ Continuous
- ☐ Annual
- ☐ Other :

Phosphorus Removal:

- ☐ Batch
- ☐ Continuous
- ■ None

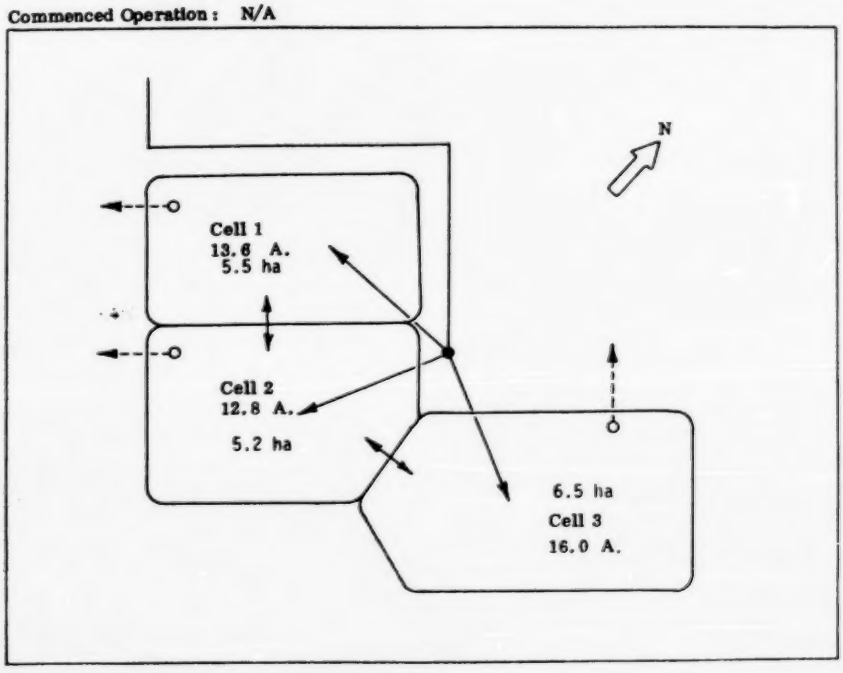
Flow Measurement :

- ☐ Flow Meter
- ☐ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 800 I gpm 60.6 l/s
Pump 2 : 850 I gpm 64.3 l/s

Total Cap : 1590 I gpm
120.4 l/s



Signifigant Industries : Consolidated Textiles

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000846 ALEXANDRIA LAGOON

MUNICIPALITY : ALEXANDRIA
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON
CONTINOUS DISCHARGE

CURRENT POPULATION : 3,437
POPULATION SERVED : 3,600
PERCENT SERVED : 104.7

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.455 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->				<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	149.800	4.830	5.700	149.800	110.0	18.5	83	13.7	115.0	17.5	84	14.6	10.0	10.5	-	-
FEB	117.000	4.034	4.600	117.000	355.0	24.0	93	38.7	212.0	27.0	87	21.6	19.5	13.0	33	.764
MAR	171.300	5.530	8.900	171.300	139.5	32.3	76	18.3	127.5	28.6	77	16.9	18.7	14.0	25	.805
APR	225.900	7.530	10.400	225.900	278.7	14.0	94	59.7	158.3	15.0	90	32.3	8.1	6.1	24	.459
MAY	151.000	4.870	6.500	151.000	89.0	8.5	90	12.1	93.7	16.5	82	11.6	11.6	8.1	30	.529
JUN	132.600	4.420	5.000	132.600	221.0	25.0	88	25.9	117.0	30.5	73	11.4	36.0	7.3	79	3.806
JUL	131.300	4.200	5.000	131.300	71.0	20.5	71	6.6	120.0	23.5	80	12.6	11.9	8.0	32	.512
AUG	146.800	4.740	6.500	146.800	100.0	24.0	76	11.1	90.0	11.0	87	11.5	12.6	6.7	46	.866
SEP	170.700	5.690	7.000	170.700	437.0	17.0	96	71.6	185.0	15.0	91	29.0	10.0	6.6	34	.580
OCT	150.800	4.860	7.400	150.800	67.5	20.0	70	7.1	72.5	17.0	76	8.3	5.9	6.3	-	-
NOV	193.000	6.430	7.500	193.000	163.0	6.0	96	30.3	117.0	14.0	88	19.8	12.3	4.0	67	1.602
DEC	182.600	5.890	9.000	182.600	82.5	12.0	85	12.8	65.0	20.0	69	8.2	11.2	5.9	47	.968
TOTAL	1922.800			1922.800				308.5				198.4				10.891
AVERAGE		5.252			176.1	18.4	89		122.7	19.6	84		13.9	8.0	42	
MAXIMUM			10.400	225.900												
NO. OF SAMPLES					33	23			33	23			33	23		

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Waste Stabilization Pond

PROJECT : ALMONTE

Cell Acreage : 23.4 + 7.3 + 9.0 + 6.0 + Aeration Cell Cell area: 9.5 + 3.0 + 3.6 + 2.4 ha

Total Acreage : 45.7 + Aeration Cell Total hectares: 18.5

Commenced Operation : Sept. 1962 - Aeration Added Sept. 1975

Operation :

- ■ Series
- □ Parallel
- □ Other :

Discharge :

- ■ Seasonal
- □ Continuous
- □ Annual
- □ Other :

Phosphorus Removal:

- ■ Batch
- □ Continuous
- □ None

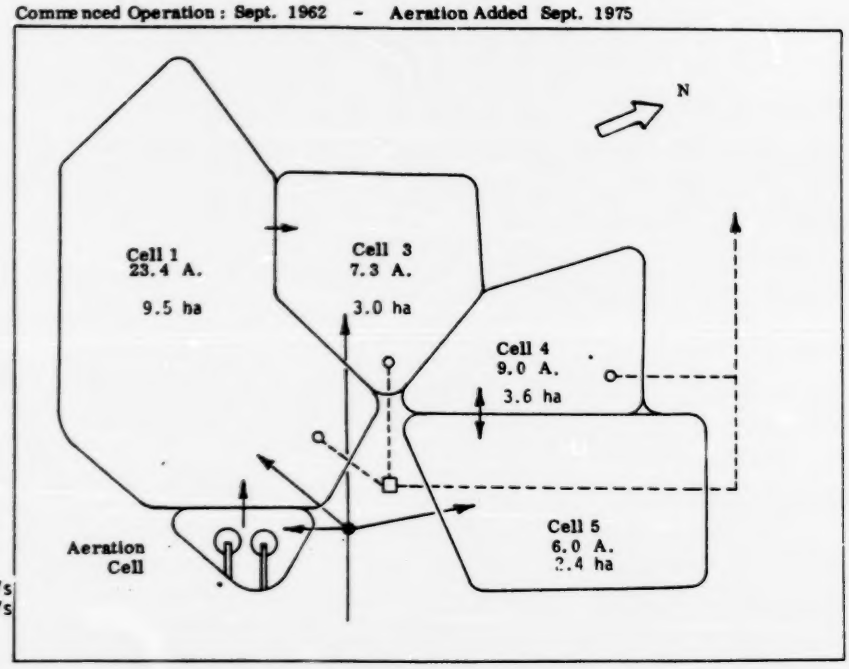
Flow Measurement :

- □ Flow Meter
- ■ Integrator
- □ Pump Timer

Pumping Station

Pump 1 : 650 I gpm 49.2 l/s
Pump 2 : 650 I gpm 49.2 l/s

Total Cap : 1000 I gpm 75.7 l/s



Significant Industries : Woolen Mills

ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000873 ALMONTE LAGOON

MUNICIPALITY : ALMONTE
REGION : 04 SOUTHEASTERN

TREATMENT FACILITY : AERATED CELL PLUS LAGOON
SEASONAL DISCHARGE

(* DATA NOT AVAILABLE)

CURRENT POPULATION : 3,839
POPULATION SERVED : 3,750
PERCENT SERVED : 97.6

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 5.455 1000 M3 DESIGN BODS : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA				---><-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	T.VOL.TO M/COURSE 1000 M3	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80																
JAN	59.500	1.900	2.600		102.0				100.0				5.1			
FEB	52.700	1.800	1.900		170.0				110.0				7.0			
MAR	88.660	2.860	2.860	*	60.0	16.5	72		97.5	35.8	63		4.4	3.6	18	
APR	116.400	3.900	3.900	*	47.0	11.6	75		47.5	14.8	68		2.3	1.1	50	
MAY	67.790	2.180	2.180		121.0				99.0				5.8			
JUN	41.100	1.400	1.900		160.0				170.0				6.6			
JUL	36.807	1.187	2.100		202.5				227.5				10.3			
AUG	40.121	1.296	1.900	*	198.0	12.8	93		122.5	18.8	84		6.9	3.5	49	
SEP	49.851	1.650	2.300		206.0				118.0				6.3			
OCT	68.800	2.290	4.800		76.0				117.5				5.4			
NOV	68.805	2.290	2.700	*	147.5	18.6	87		82.5	26.3	68		4.8	4.0	16	
DEC	65.779	2.120	5.665		204.5				117.5				18.8			
TOTAL	756.313							95.6				70.7				2.9
AVERAGE		2.073			141.2	14.8	89		117.4	23.9	79		6.9	3.0	56	
MAXIMUM			5.665													
NO. OF SAMPLES					25	22			25	25			25	22		

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EXFILTRATION LAGOON

Ministry of the Environment
Ontario

Northeastern Region
⑤

REGIONAL OFFICE

SUDBURY
199 Larch St.
705-675-4501

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North Bay
1500 Fisher St.
705-476-1001

Sault Ste. Marie
445 Albert St. E.
705-949-4640

Timmins
83 Algonquin Blvd. W.
705-264-9474

Parry Sound
74 Church St.
705-746-2139

Ministry of the Environment
Ontario

Northeastern Region

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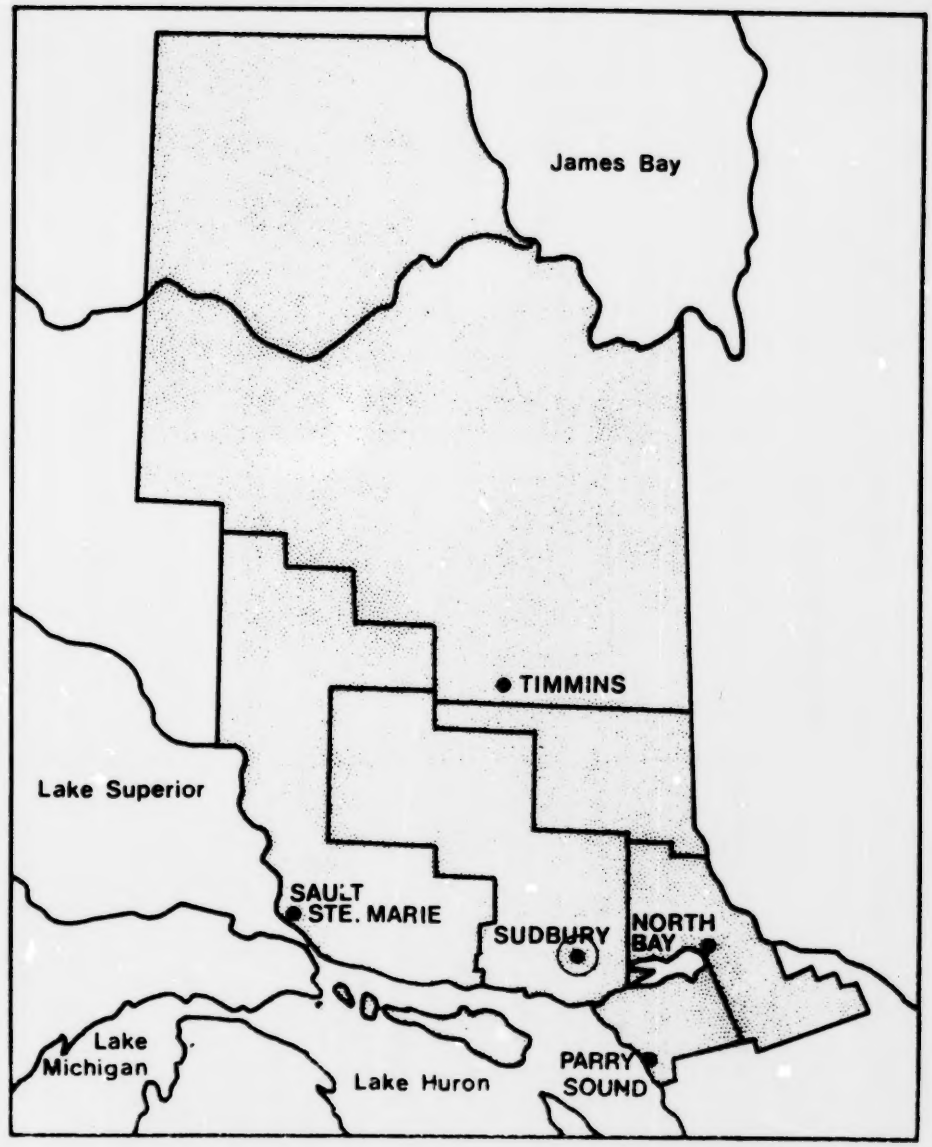


Waste Stabilization Pond

PROJECT : MATTAWA

Cell Acreage : 4.5 + 8.5 + 5.0 Cell Area: 1.8 + 3.4 + 2.0 ha

Total Acreage : 18.0 Total hectares: 29.1

Commenced Operation : 1963

Operation :

- ■ Series (# 1 & # 3 in parallel
- □ Parallel Series to #2)
- □ Other :

Discharge :

- □ Seasonal
- ■ Continuous (100% Exfiltration)
- □ Annual
- ■ Other :

Phosphorus Removal:

- □ Batch
- □ Continuous
- ■ None

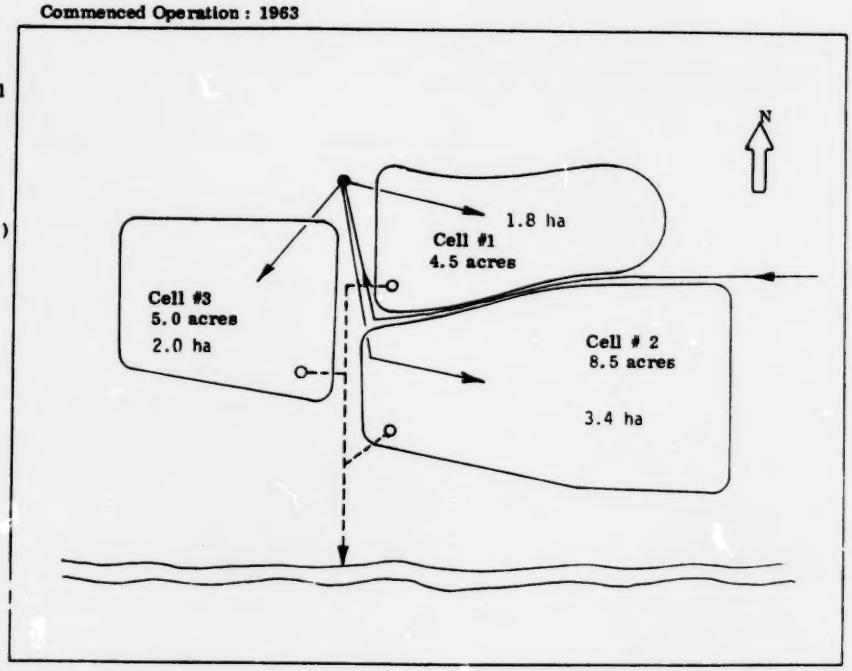
Flow Measurement :

- □ Flow Meter
- □ Integrator
- ■ Pump Timer

Pumping Station

Pump 1 : 800 I gpm 60.6 l/s
Pump 2 : 800 I gpm 60.6 l/s

Total Cap : N/A



ONTARIO MINISTRY OF THE ENVIRONMENT — UTILITY MONITORING INFORMATION SYSTEM — REPORT TYPE 001

WASTE STABILIZATION PONDS - PERFORMANCE REPORT

WORKS NUMBER : 110000436 MATTAWA LAGOON

MUNICIPALITY : MATTAWA
REGION : 05 NORTHEASTERN

TREATMENT FACILITY : EXFILTRATION LAGOON
CONTINOUS DISCHARGE

CURRENT POPULATION : 2,697
POPULATION SERVED : 2,600
PERCENT SERVED : 96.4

(* NO DATA AVAILABLE)

OPERATING AUTHORITY: MINISTRY OF THE ENVIRONMENT

DESIGN CAPACITY : 0.818 1000 M3 DESIGN BOD5 : DESIGN SUSP.SOLIDS :

	<--- FLOW DATA --->			<-BIOCHEMICAL OXYGEN DEMAND->				<--- SUSPENDED SOLIDS --->				<--- TOTAL PHOSPHORUS --->			
DATE	TOTAL VOLUME 1000 M3	AVG DAY 1000 M3 /DAY	MAX DAY 1000 M3 /DAY	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG	INFLUENT MG/L	EFFLUENT MG/L	REDUCTION %	REDUCTION 1000 KG
JAN/80-DEC/80															
JAN	25.427	.820	1.309	150.0				110.0				3.0			
FEB	19.473	.671	1.309	35.5				40.0				2.9			
MAR	35.182	1.135	3.436	74.0				95.0				4.2			
APR	29.127	.971	1.800	12.5				42.5				1.9			
MAY	21.600	.831	1.309	23.5				24.5				2.0			
JUN	19.950	.665		35.5				90.0				2.8			
JUL	19.172	.618	.949	*				*				*			
AUG	25.559	.823	2.090	*				*				*			
SEP	25.367	.846	1.063	40.0				40.0				*			
OCT	31.290	1.010	1.407	11.0				30.0				1.4			
NOV	26.676	.889	1.031	128.0				245.0				4.1			
DEC	*			*				*				*			
TOTAL															
AVERAGE		.844		56.6				79.6				2.7			
MAXIMUM			3.436												
NO. OF SAMPLES				15				15				14			

APPENDIX 1: ADDITIONS AND CHANGES TO THE 1980 WATER POLLUTION CONTROL PROJECTS

During 1980 changes have occurred to the Ministry-operated wastewater treatment plant projects. Some have altered their mode of operation while others have switched operating authority. New plants have also come into existence. These changes are noted as follows:

(A) SWITCH FROM MINISTRY TO MUNICIPAL OPERATING AUTHORITY

MECHANICAL PLANTS

West-Central Region

Elora

Central Region

Midland

Northeastern Region

*Timmins (Mattagami)
*Nickel Centre (Coniston)
Rayside-Balfour (Azilda)
Rayside-Balfour (Chelmsford)
*Sudbury
Valley East

WASTE STABILIZATION PONDS

Central Region

Lakefield

(B) START-UPS IN 1980

MECHANICAL PLANTS

Southwestern Region

Petrolia

Central Region

North Dumfries (P.V. Ayr)

Southeastern Region

Cobden
*Plympton Twp (Wyoming)

Northeastern Region

*Onaping Falls (Dowling)

Northwestern Region

*Atikokan Twp.
*Nakina Twp.

WASTE STABILIZATION PONDS

Southwestern Region

*McGillvary Twp. (Parkhill)

Northeastern Region

Casimir, Jennings & Appleby Twp. (St. Charles)
Gore Bay

* For these projects no data is available in this Operating Summary.